# ENGINEERING and MINING JOURNAL.

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NOTE.—Communications relative to the editorial management should be addressed to Mr. ROTHWELL, P. O. Box 4404, New York. Articles written by Mr. RAYMOND will be signed thus *

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## NOTICE.

THEODORE F. VAN WAGENEN, of Denver, Colo., is no longer connected with the ENGINEERING AND MINING JOURNAL or the Scientific Publishing Company, and is not authorized to collect moneys or transact any business whatever for the same.

## THE FUEL OF THE FUTURE IN EUROPE.

The good ship Herder, which sailed from this port on the 24th, carried among its passengers Mr. GEORGE S. DWIGHT, who goes to Europe, and primarily to Sweden, to erect works for the manufacture of "water-gas," under the Lowe-Strong patents, as already described in these pages.

The Swedish engineers and metallurgists, universally recognized as among the most thorough and skillful in the world, devoted much attention to this subject, both while attending our Centennial Exhibition and since their return to Europe. They have carefully watched the results obtained, and after a characteristic, thorough investigation, they have decided on the erection, first, of experimental works, and subsequently, should the results there obtained prove satisfactory, as there can be scarcely any doubt they will, they expect to adopt the system very generally in their iron works. These prudent, enterprising iron-masters and skillful engineers anticipate the most important results from the advantages which this method offers for making available their abundant supplies of peat; indeed, if it should succeed as well as working experiments here have indicated, it is expected to create a very revolution in the Swedish iron industry.

Nor are the Swedes the only European engineers who have given the subject attention, and who propose testing it on a large scale. Mr. DWIGHT has received invitations from several important works to consult on the subject, and we hope shortly to be able to announce working results which will confirm still further the very favorable opinion we have formed from its operations in this country, and frequently expressed in these pages, of this method of manufacturing "the fuel of the future."

Mr. DWIGHT bears with him many good wishes for his success; and if a really valuable invention or process, united with high personal advantages, will bring it, we shall not have to wait long for this result.

## TO ENTERPRISING BUSINESS MEN.

There is now no longer any question as to the fact that the business industries of this country have passed the lowest point and are improving throughout the land. In gold and silver mining this country has never seen more prosperous days; mines are being opened and are making their owners rich from one end of America to the other. It is true the Great Bonanza, which, for several years, has poured out its treasures from the Comstock, has ceased to produce so largely; but there are far more producing, paying mines now being worked than ever before, and the demand for machinery, furnace, mill, and mine supplies of every kind, from gigantic pumps to miners' boots, never was more active. Certainly, prices are low, and will continue so for some time; but the demand exists, and those who seek it by advertising and calling special attention to the value of their wares, are receiving a golden return for their enterprise.

In addition to this great home market, the rapid growth of our foreign export business, and the growing conviction, long since expressed in the ENGINEERING AND MINING JOURNAL, that this country must become a great manufacturing and exporting country, by reason of the remarkable excellence of our machinery and processes, make it important that our advantages and facilities for supplying foreign markets should be brought to the attention of the whole civilized world.

The ENGINEERING AND MINING JOURNAL has always been among the first and most reliable guides in directing business men to new and profitable fields, and its managers are convinced that it can now do the business community, and especially its patrons, a signal service. They have consequently decided on the issue, on the 23d of November, of a number of the ENGINEERING AND MINING JOURNAL, which, for beauty of execution and uniqueness of design, will be treasured by all who receive it as a curiosity to be preserved, and as an example of American enterprise to be talked about. Of this edition we expect to print 100,000 copies, and to distribute them not only throughout the length and breadth of our own land, but in every part of the civilized globe.

The favor which this idea has met with among enterprising business men is very encouraging, and already a number of our present advertisers, who are entitled to have their present cards appear *without extra charge*, have decided on enlarging them for three months, or to take special supplement pages to illustrate and describe their manufactures.

This opportunity, by far the best that has ever been presented in this or any other country to manufacturers of and dealers in any kind of machinery or supplies consumed at mines or industrial works; to owners or dealers in mining property, timber, and farm lands; to bankers and professional men generally, and to merchants, for bringing their products or business to the attention of enterprising men in every part of the world, is offered *without any extra charge whatever* to those advertising for not less than three months in the JOURNAL, and no other cards will be received except as supplement illustrations, such as we are accustomed to issue from time to time.

Among the interesting subjects to be illustrated and described will be the most famous example of railroad engineering in the world, and the most noted silver mines history records—mines whose capacity to produce makes our own great Comstock bonanza seem insignificant.

It is the object of the managers of the ENGINEERING AND MINING JOURNAL not only to add largely to their own subscription-list, but to give the patrons of the paper an opportunity to increase their business and to open up new markets for the products of American ingenuity everywhere.

The regular advertising rates of the JOURNAL are printed on its front page each week; and as these rates are not varied from in any case, and no agents are allowed commissions from them, all can satisfy themselves that they are treated with perfect impartiality, and are, as the miners term it, on "hard pan." Since all cards, to get in this special number, must be taken for at least three months in the JOURNAL, and as we are now sending out every week immense extra numbers of the JOURNAL in soliciting for this special edition, business men will see the advantage of sending in their advertisements at once, that they may take advantage of this and also of the fall trade now coming in.

We have further plans for the benefit of our patrons now under consideration, which we may announce in our next.

## THE LAKE GEORGE MEETING OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

The members arrived at Ticonderoga, N. Y., at noon on Tuesday, October 15th, and were received by Mr. CYRUS BUTLER, Chairman of the Local Committee of Arrangements. After dinner at the Bailey House, the works of the American Graphite Company and the Horicon Iron Company were visited, under the guidance of Mr. BUTLER, President of both companies, and Mr. WILLIAM HOOPER, Superintendent. An excursion was then made in carriages to Old Fort Ticonderoga, on Lake Champlain, after which the party was taken to the Rogers Rock Hotel, on Lake George.

The first session of the Institute was held in the parlor of the hotel on Tuesday evening. Mr. ECKLEY B. COXE, President of the Institute, made an opening address "On the Duties and Responsibilities of Mining Engineers," and Dr. CHARLES B. DUDLEY, chemist to the Pennsylvania Railroad Company, read two papers: "The Chemical Composition and Physical Properties of Steel Rails," and "Does the Wearing Power of Steel Rails Increase with the Hardness of the Steel?"

After many of the members had expressed their high appreciation of the importance and value of Dr. DUDLEY'S communication, it was voted that the discussion of the paper should be postponed until the next meeting of the Institute in February.

Mr. E. B. COXE then made a short communication on "A Peculiar

Form of Anthracite." Before adjournment, the members were each presented with a box of graded pencils by the Joseph Dixon Crucible Company, Orestes Cleveland, President, as a souvenir of the visit to the works of the American Graphite Company. The presentation was made by Dr. R. W. Raymond on behalf of Mr. J. A. Walker, Secretary of the company.

On Wednesday, a delightful excursion was made on the steamer Ganooskie, Capt. Arnold Hulett, to the head of Lake George, stopping at the Hundred Island House for dinner. On returning, a special train was taken to Port Henry, stopping at Crown Point, where an opportunity was given to inspect the Crown Point Iron Company's furnaces.

The second session was held at the Opera House, Port Henry, on Wednesday evening, when the following papers were read:

"The Wheeler Process of Welding Iron and Steel without the Use of Fluxes," by Dolphus Torrey, of Philadelphia.

"An Improved Tuyere and Pipe," by John M. Hartman, of Philadelphia.

"New Determinations of the Co-efficients of Friction of Lubricated Journals and of the Laws Governing such Friction," by Prof. R. H. Thurston, of the Stevens Institute of Technology, Hoboken, N. J.

"A Direct Process of Copper Smelting," by H. M. Howe, of Boston, Mass.

On Thursday, a special train was taken on the Lake Champlain and Moriah Railroad to Mineville, where the principal mines of the Port Henry Iron Ore Company and of Witherbee, Sherman & Company were inspected. The members were here invited to a lunch, which had been generously provided by the two companies. On returning to Port Henry, the Port Henry furnaces, Cedar Point furnace, the ore wharves, and the Cheever Ore Bed were visited.

The third and concluding session was held on Thursday evening, at Port Henry, when the following papers were read:

"Fighting Fire in Anthracite Coal Mines," by H. S. Drinker, of Philadelphia.

"Possible Economy in Charcoal Manufacture," by John Birkinbine, of Philadelphia.

Owing to lack of time to read the following papers in full, they were read by title:

"A Friction Clutch," by Prof. T. Egleston, of New York City.

"An Improved Method of Hoisting and Dumping Coal," by Eckley B. Coxe, of Drifton, Pa.

"The Cost of the Water-Works of the Edgar Thomson Steel Co.," by P. Barnes, of Plainfield, N. J.

"Shaft Surveying in the Brown Hematite Mines of Northampton Co., Pa.," by Ellis Clark, Jr., of Glendon Iron Works, Easton, Pa.

"Experiments on the Removal of Carbon, Silicon, and Phosphorus from Pig-Iron by Alkaline Carbonates," by Dr. Thomas M. Drown, of Lafayette College, Easton, Pa.

The following resolutions were unanimously adopted:

*Resolved*, That the Secretary be instructed to convey the thanks of the Institute to the following gentlemen, for the cordial courtesy and hospitality which have so greatly contributed to the comfort, pleasure, and profit of the Institute during the meeting now about to close, namely: Messrs. Le Grand B. Cannon, President of the Champlain Transportation Company; Capt. Arnold Hulett, of the steamer Ganooskie; Cyrus Butler, President, and William Hooper, Superintendent, of the American Graphite Company and the Horicon Iron Company; Orestes Cleveland, President, and J. A. Walker, Secretary, of the Joseph Dixon Crucible Company; E. Hedding, Superintendent of the Lake Champlain and Moriah Railroad Company; Thomas Dixon, President, and T. Vorhees, Superintendent, of the Delaware and Hudson Canal Company; Gen. Hammond, President, A. L. Inman, Manager, and Capt. McDonald, Mining Superintendent, of the Crown Point Iron Company; W. H. Case, Engineer, G. G. Roe, Mining Superintendent, and W. T. Foote, Furnace Superintendent, of the Port Henry Iron Company; Walter Tefft, Superintendent of the mines of Witherbee, Sherman & Co.; T. F. Witherbee, Superintendent, and I. Cary, Assistant Superintendent, of the Cedar Point Iron Company, and O. S. Presbury, Superintendent of the Cheever Ore Bed.

*Resolved*, That special thanks be extended to Messrs. Cyrus Butler, Frank S. Witherbee, T. F. Witherbee, and A. L. Inman, the very efficient Local Committee, for the untiring zeal with which they have devoted themselves to the work of arrangements for this meeting; and that to the thanks of the Institute be added its congratulations upon the perfect success which has crowned their endeavors.

A resolution complimentary to the ladies was also adopted with much enthusiasm; after which, the meeting was declared adjourned.

On Friday morning, an excursion was made to the mines of the Crown Point Iron Company, under the guidance of Mr. Alvin L. Inman and Captain McDonald, and also to the ore-separating works and forges of the same company. On returning to Crown Point, a number of the members availed themselves of the courtesy of the Delaware and Hudson Canal Company, and made an excursion to Montreal, the remainder returning home.

The following members and associates were elected at the first and third sessions of the meeting:

MEMBERS.

| | |
|---|---|
| Herman B. Butler, Ticonderoga, N. Y. | John McFadyen, Johnstown, Pa. |
| James R. Cameron, Osceola, Clearfield County, Pa. | William Mauthey, South Pittsburg, Tenn. |
| William H. Case, Port Henry, N. Y | James Cosmo Newberry, Melbourne, Australia. |
| Dr. Charles P. Dudley, Altoona, Pa. | Oliver S. Presbury, Port Henry, N. Y. |
| Dr. Frederick Endlich, Reading, Pa. | John Provis, Alamos, Sonora, Mexico. |
| G. Clinton Gardner, Altoona, Pa. | George R. Sherman, Port Henry, N. Y. |
| Charles L. Hammond, Crown Point, N. Y. | Dolphus Torrey, Philadelphia. |
| William Hooper, Ticonderoga, N. Y. | Albert Tower, Poughkeepsie, N. Y. |
| Joshua Hunt, Catasauqua, Pa. | Lamartine C. Trent, Belmont, Montana. |
| F. H. McDowell, San Francisco, Cal. | |

ASSOCIATES.

| | |
|---|---|
| Edward B. Buckley, Antwerp, N. Y. | William H. Price, Cleveland, O. |
| Willard Parker Butler, New York City. | William G. Thomas, Jr., Brussels, Ill. |
| J. Lloyd Haigh, New York City. | John A. Walker, Jersey City, N. J. |
| Charles L. Palmer, Port Henry, N. Y. | L. E. Warner, Cincinnati, O. |

## THE MISSISSIPPI CURRENT.

Editor Engineering and Mining Journal:

Sir: As your notice on the 7th ultimo, of my review of Humphreys and Abbott's report on the "Physics and Hydraulics of the Mississippi River," contains some important mistakes, I respectfully ask the privilege of pointing them out to your readers.

You say: "He sets himself to controvert two propositions, which are fatal to his own theories and schemes. The first is, that the greatest velocity of the current of the Mississippi does not correspond to the greatest proportion of sediment carried by it. This was proved by Humphreys and Abbott, through experiments showing that the quantity of sediment per cubic foot of water is not proportional to the velocity of the water."

This is a mistake. On the contrary, they did not prove it, but only asserted it. I, however, proved by their own data, that the greatest velocity *does* correspond to the greatest quantity of sediment carried by it, and I will presently show that you admit it.

You fall into a *second* mistake in supposing that they *could* prove the contrary by showing that the quantity per cubic foot is not proportional to the velocity, for the simple reason that the sediment in a cubic foot is not the proper quantity to compare with the current to demonstrate the relation in question. The quantity in a cubic foot can not always be proportional to the velocity, because the suspending power of the current is modified by the depth of the water (as well as by other causes), and the depth of the stream is by no means uniform. I endeavored, on page 9 of my review, to explain why the depth influences the power of suspension.

You say: "But Mr. Eads claims that because the greatest velocity is coincident, other things being equal, with the greatest volume of the stream, therefore the basis of comparison should be the total quantity of sediment carried by the stream." This constitutes your *third* mistake. I think you misunderstand the reason for such comparison. It is not because the greatest volume and greatest velocity are coincident, for they are not always so. The relation exists whether they are coincident or not. It is simply because the total force expended in one second should be compared with the total work done by that force in that second, and not with a single unit of one of the four elements of the work. These elements are *force*, *matter*, *space*, and *time*, and in their comparison *space* and *time* are totally neglected, as is fully explained in my review. Because the relation did not appear in this comparison, they forthwith declared that none exists between the current and the sediment it carries. Their comparison was as meaningless as it would be to compare a bushel of grain with a linear inch of the bottom of a bushel measure. The elements of diameter and depth being ignored, we might just as well assert that there was no correspondence between that quantity of grain and the measure in which it was meted. There was no harm, however, in making such comparison. The harm came from erecting on it absurd and dangerous theories to mislead others. The idea advanced and supported by them, that "Mississippi water is under-charged with earthy matter, and therefore no reasonable reduction of its flood velocity by an outlet will produce a deposit in the bed below," is a pernicious error, resting upon their comparison of the current *per second* with the sediment found in a cubic foot of the water at the time. They triumphantly refer to their diagrams exhibiting the results of these comparisons, to prove this statement!

Your *fourth* mistake consists in declaring that "The absurdity of this claim [my method of comparison] is apparent at once." This you proceed to prove in the following manner: "Mr. Eads does not seem to see that if the quantity of water passing down the river remained the same, the cross-section would diminish in proportion to the increase of its rapidity; and hence, that the result of his calculation would be exactly the same as that of a calculation based upon a single cubic foot. If $Q$ be the number of cubic feet passing a given point per second, and $V$ be the velocity in linear feet per second, $\frac{Q}{V}$ will be the cross-section. So long as $Q$ is constant, any increase in $V$ will proportionately reduce the value of $\frac{Q}{V}$. Now the quantity of water passing down the Mississippi is supplied by Nature. The question therefore is, if this quantity were made to move faster, would it carry a proportionately larger quantity of sediment? * * * Mr. Eads takes unnecessary pains to construct from their data a new diagram, showing that, although the *proportion* of sediment does not vary as the velocity, the total amount of sediment does vary (roughly) as the total amount of water; and as these observations were made upon changes in velocity due wholly to the varying supply of water, and not to change of grade, he establishes in this way an apparent relation between total sediment per second and velocity."

Now, having admitted that I establish this relation "in this way," and it being an impossibility to show it in this way, or in any other way, if it did not exist, I demonstrate the proposition you declare to be so absurd. I show it to exist *in their own data*, which is precisely where they said it did not exist. I prove they are in error by their own testimony, and you confess that I do so, while trying to expose what you politely term my "exhibition of conceit and ignorance on elementary questions."

Your *fifth* mistake consists in asserting: "But if the velocity were made to vary by any other cause than the quantity of supply, this relation would disappear."

In 1875, the river at South Pass flowed out of a channel about 800 feet wide and 35 feet deep, into the sea, and spreading out like a fan, it crossed the crest of the bar two miles further out, with a width of about

5000 feet, and a depth of only 8 feet in mid-channel. This fan-shaped discharge has been contracted to a uniform width of 1000 feet by two parallel jetties extending from the banks of the stream out into the deep water in the sea; hence $\frac{Q}{V}$, or the cross-section of the volume at the crest of the bar, was reduced; $V$ was increased, while $Q$ remained practically constant.

These conditions, therefore, fulfill your illustration. Let me repeat your words: "The question, therefore, is, if this quantity [moving down the pass] were made to move faster [as it does between the jetties], would it carry a proportionately larger quantity of sediment? HUMPHREYS and ABBOTT have demonstrated that the whole mass would not do so, because each cubic foot of it does not." And Nature has demonstrated that HUMPHREYS and ABBOTT were sadly in error; for it caused the water, already charged with sediment when it entered the jetty channel, to take up a still greater quantity because of the higher velocity imparted to the mass, and it was thus enabled to remove, in a little over two years, about 5,000,000 cubic yards of the deposit between the jetties. The velocity was not due, in this case, to volume, but "to change of grade." Could it be possible for this vast mass of sediment to be taken up by the water as it passed through the jetties and yet not increase the quantity already in each cubic foot of it?

You proceed to say: "In the second part of his essay, Mr. EADS assails the statement that the Mississippi bottom is composed of blue clay, older than alluvion, and exceedingly tenacious. * * * Aside from his silly attempts to ridicule it, he succeeds in showing that the proofs are not as numerous and conclusive as they might be made by further observations."

To form a correct judgment of the importance of this question, and to appreciate the frankness of this courteous admission, it should be stated that a recommendation is now before Congress to expend forty-six million dollars for a new system of levees, to have a maximum height of eleven feet above the highest flood known on the Mississippi; and that this recommendation is made by General HUMPHREYS, Chief of Engineers, and a commission of which General ABBOTT was a member, and that the gist of the reasons which induced these engineers to recommend these enormous levees is contained in the following extracts from the Commissioners' report (pages 16 and 17): "Very numerous soundings, with leads adapted to bring up samples of the bottom, were made by the Mississippi Delta Survey throughout the whole region between Cairo and the Gulf. They showed conclusively that the *real bed*, upon which rest the shifting sand-bars and mud-banks made by local causes, is always found in a stratum of hard blue clay, quite unlike the present deposits of the river. It is similar to that forming the bed of the Atchafalaya at its efflux, and, as is well known, resists the action of the strong current almost like marble. Clearly, then, the bed of the Mississippi can not yield." They proceed to say, therefore: "If we guard against these crevasses by raising and strengthening our levees, an elevation of the high-water mark exactly proportional to the increased volume will be sure to occur."

In my review I explain (pages 15 and 16) the cause of a phenomenon that is presented by every sediment-bearing river in the world; namely, the greater is its volume, the lower is its flood-line or surface-slope. To close the gaps and crevasses in the present levees, must increase the river volume, and hence it must lower its slope or fall per mile; for unless its bed is almost like marble, it must deepen under the action of the increased current created by the retention of its flood-waters; and in that event, such of the levees as are now effective must then prove higher than necessary. If crevasses occur, the volume is diminished, the current becomes more sluggish, and deposits are thrown down, shoals are increased, and the river gradually assumes a steeper slope. Thus, higher levees become a necessity, and the navigation is made more difficult. Therefore, if this unyielding clay is a myth, the complete repair of the present levees, which will cost probably not over four million dollars, will be sufficient to protect the lands, and their repair must incidentally benefit the navigation.

From this it is evident that the relation of current to suspended sediment, and the character of the material composing the river-bed, are the two grand facts upon which rests the solution of the problem of reclaiming the alluvial lands, and deepening the channel of the Mississippi.

The question of the existence of this unyielding clay is, therefore, one of immense practical importance, not only as forming the basis of a proposition to expend forty-six million dollars, but as a vital question in the improvement of the navigation of the river.

In the thousand miles between Cairo and New Orleans there is not a stretch of river fifty miles long in which I have not stood upon the bottom beneath the shelter of the diving-bell, and examined the character of its bed. These examinations embraced many hundred localities, and in none did I find any trace of this marble-like clay. I therefore felt certain, notwithstanding the positive assurances of these gentlemen to the contrary, that this clay was a myth. I examined the report, however, to see if its existence had been verified by borings "beneath the shifting sand-bars and mud-banks," but to my surprise found that none had been made during the survey. I then carefully read again Chapter II., where, in the words of the text, "the results exhibited in Appendix C are discussed."

The elaborate discussion of these results, in that chapter, by which this imaginary clay is shown to belong to a remote geologic epoch, failed to satisfy me, and I determined to undertake the labor of analyzing for myself the record in Appendix C, to learn the exact truth. There I found that between Cape Girardeau, Mo., and Vicksburg, Miss., only eleven lines of soundings had been run across the river at different places in this entire distance of 650 miles. The number of soundings on each line averaged about fifty. On four of these lines no samples at all were obtained; and on the other seven lines a total of only thirty-five samples was secured! Astonished at this small number, I turned to the text and re-read the impressive statement, under the imposing head of *Geology of the Channel*, that "A knowledge of the river-bed is of the highest practical importance, * * * and great efforts have been made to acquire it." Unconsciously I contrasted these few samples with these great efforts, and felt sure I had got into the wrong appendix. Indeed, I felt morally certain of it, when I read the corroborative statement on page 14, that "great pains were accordingly taken to collect specimens of the bed wherever soundings were made." Here were at least 550 soundings and only 35 specimens! When I remembered that Congress had been urged by these gentlemen to expend $46,000,000, because "*very numerous soundings*" with prepared leads had *conclusively* proved that "the bed of the Mississippi can not yield," I was convinced that Appendix C was not the place to look for all of the facts. I therefore examined all the appendices from A to M inclusive, and looked through the four or five hundred pages of the report, for additional results of soundings in this 650 miles; but in vain. Pursuing this interesting investigation still further, however, I examined the "uncompromising facts" presented by this small array of specimens supporting the affirmative side of this ancient geologic and marble-like, hard blue-clay question, and was amazed to find that Appendix C actually shows that twenty-five of these samples *were nothing but sand!* Three of them were sand mixed with clay, leaving but *seven solitary specimens of clay*, taken from the end of a greased sounding-lead, to establish the geology of the bed of six hundred and fifty miles of the Mississippi! Only seven bits of clay to support these positive assurances and grave statements, and to sustain a recommendation to expend $46,000,000, to build levees eleven feet higher than the great flood of 1858!

These are *the facts* developed in my review, and you have not had the temerity to dispute them. Yet you say: "The attempt of Mr. EADS to show up two eminent, painstaking, skillful, and disinterested engineers, as charlatans, ignorant of the first principles of mechanics, recoils upon himself."

You have wholly mistaken my motives in reviewing their report. I have neither time nor inclination to show up the charlatanry of any one. My object was to correct, if possible, the wide-spread effect of certain very extensively-accepted errors, and thus remove the chief obstacle to the adoption of a correct system for the improvement of the river, and the reclamation of its alluvial basin. To disprove their theories and conclusions respecting the transportation of sediment, it was necessary to show that problems in dynamics can not be solved without bringing into them the elements of *space* and *time*. These they had neglected, and therefore when I took their tables and brought these elements into the problem, their own data proved precisely what they had denied; namely, that there is an intimate, direct, and constant relation between the velocity of the current and the burden of sediment it carries in suspension; and that this relation is modified by the depth of the water.

My declaration that the river-bed is composed of its own deposits, and that the increased current resulting from the confinement of its entire flood volume between levees will cause it to excavate a deeper channel, and thus prevent any increase in the high-water mark, is met by the following on page 16 of the Levee Commissioners' report: "This reasoning, if true, would establish conditions singularly fortunate for the levee system; but, unluckily, the wish has been father to the thought. Uncompromising facts show that the premises and conclusions are both erroneous for the lower Mississippi. Very numerous soundings * * * were made by the Mississippi Delta Survey," etc. etc. Being thus squarely confronted with *uncompromising facts*, I was compelled to go to the facts themselves, and my review shows the result of my investigation in tha direction.

Aside from the insignificant number of specimens of clay which constitute these *uncompromising facts*, a moment's reflection must show the absurdity of basing the existence of this marble-like clay upon such testimony as a greased lead could bring up from the bottom of the Mississippi, even if the samples had been numbered by thousands. If this supposed clay yields but slowly to the strong current, it would certainly not yield samples of its substance to the grease on a sounding-lead. Nor is there any thing in the record of the soundings to show that the specimens were different from the ordinary blue-clay deposits of the river, which are thrown down from its waters wherever the current is very sluggish during low-water seasons. The only description of the specimens in Appendix C is contained in the words "*clay*," or "*blue clay*." Besides all this, it is plain that the specimens adhering to the end of a tallowed plummet can not possibly give any evidence whatever of the character of the material one inch below the surface that was in contact with the tallow. Respectfully, etc., JAMES B. EADS.

RIGGS HOUSE, WASHINGTON, October 10, 1878.

## WESTERN IDEAS IN JAPAN.

The remarkable revolution which has been going on in Japan within the past decade, by the extensive adoption of scientific and industrial ideas and institutions from Europe and America, and which has earned for the Japanese, from certain enthusiastic admirers, the designation of the "Yankees of the East," will, it is to be hoped, with continuously growing intercourse with Western nations, leave untouched the manners and morals of this intelligent and enterprising people, to which all writers agree in according the most pleasing tributes of praise.

These, for example, are the terms in which Prof. E. S. MORSE, the eminent naturalist, at present fulfilling a scientific mission in Japan, speaks of its people: "If some of the indications of civilization are to treat each other kindly, to treat their children with unvarying kindness, to treat the animals below them with tenderness, to honor their father and mother, to be scrupulously clean in their persons, to be frugal and temperate in their habits—if these features are to be recognized as civilized, then this pagan nation, in these respects, is as far ahead of us as we are of the Terra del Fuegans."

And this is the picture that Sir DAVID WEDDERBURN draws of the social usages of Japan: "A country where men never lose their temper, where women and children are always treated with gentleness, where common laborers bow and beg pardon if they happen to jostle accidentally, where popular sports do not inflict suffering on the lower animals, and where cleanliness takes such a high rank among social virtues as to be carried almost to a ludicrous excess;" while their courtesy is "singularly free from servile and mercenary considerations." Who that reads these voluntary tributes of admiration but must harbor the thought that we might, after all, be decidedly the gainers if but a portion of the overflow of much fervid zeal for the weal of the heathen were expended in engrafting the heathen virtues upon Western civilization?

## EXPLOSION OF GAS AT PROSPECT SHAFT, PA.

By T. M. Williams, Inspector of Mines.

So many people daily inquire of me about the cause of this explosion, which resulted so seriously, that I have concluded to send you a few lines with my views, based upon the evidence gathered from the persons connected with the colliery.

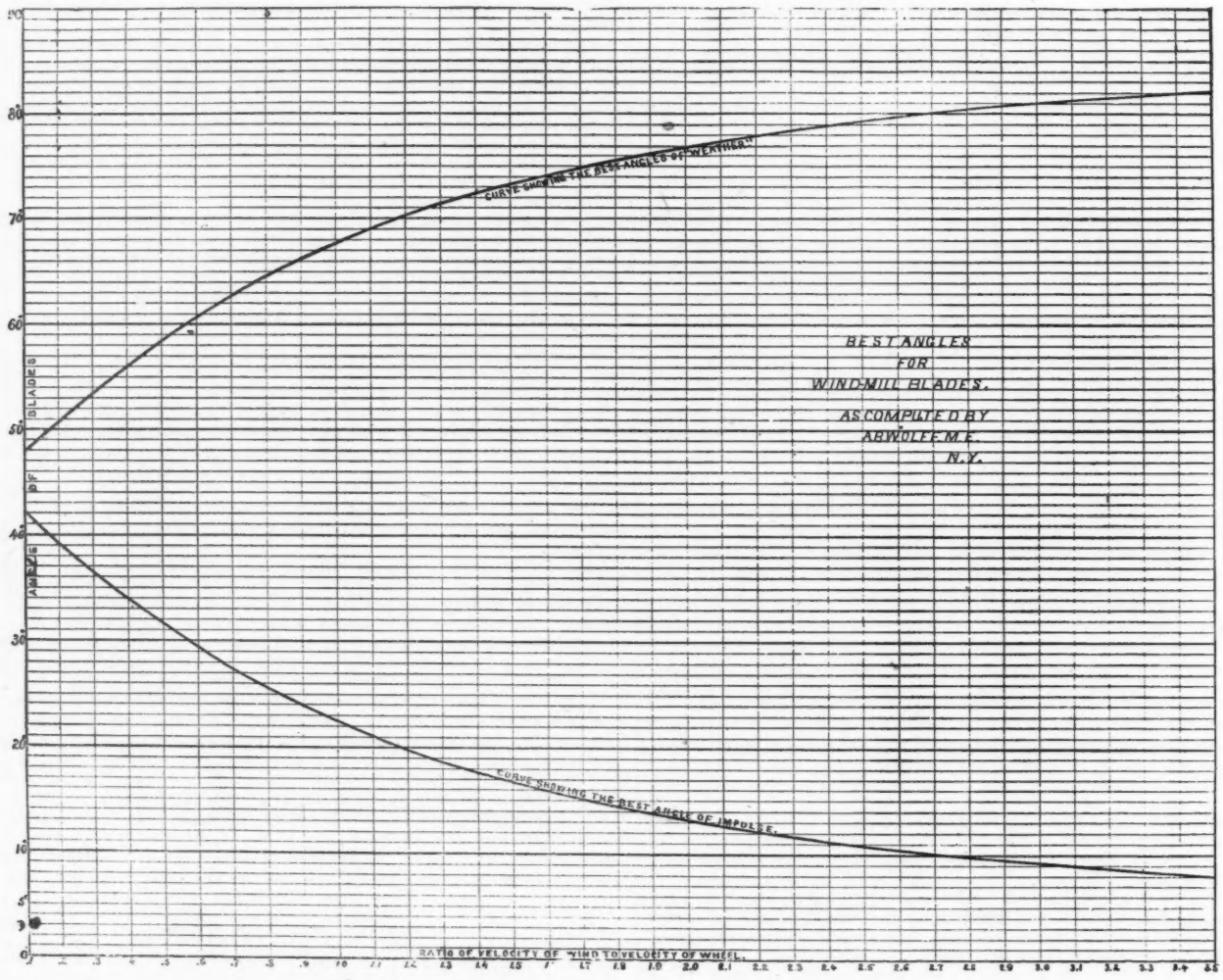
The explosion occurred about 3.15 P.M. on Tuesday, the 8th inst., at a point near the face of the northwesterly gangway, which has been driven out under and beyond the Susquehanna River. The seam in this basin has always discharged a very large quantity of explosive gas since it was first opened at a distance of several thousand feet from the present face of gangway. The coal at this point was so extremely "gassy" that the officers of the company had the gangway stopped, and it remained idle for some nine or twelve months, expecting that the gas would drain off.

Some time ago they again commenced working the gangway and its parallel air-way. In the latter naked lights were allowed; but in the former the men worked exclusively by safety-lamps. For the first hundred feet they did not attempt to use blasting-powder, but mined the coal all with picks. They then found that the gas was not so concentrated as it had been, having a larger surface for drainage, when they commenced using powder for blasting and igniting their blasts with fuse altogether.

The coal in this section is rather shelly and dirty, and stands on an angle of about 25 degrees, being rather steeper than the balance of the mine. This led the officers to anticipate meeting an anticlinal axis to the north of them pretty close, and, to satisfy themselves, they commenced to drive two places to the rise, running parallel. In these places the explosion occurred of which we write. There was not a great distance from them to the gangway face, and no chambers opened between the two points. The two places had been driven up about 180 feet, and had a cross-cut at the face. Width of each place ten feet, and height about 6½ feet.

The boss, William Samuels, had been with the men in the faces about 10 o'clock A.M., and ordered them to square up the coal in the cross-cut, and to suspend operations there for the time. About one o'clock P.M., one of the fire-bosses ordered a stopping built in the cross-cut below the one they had in the face, so as to force the air up into the faces, and do away with the wooden brattice on both sides of the pillar, between the two cross-cuts, a distance of fifty-one feet. Shortly before three o'clock P.M., the miners set off a blast in the new cross-cut, from which the gas was ignited. They immediately went down to the gangway to get water in powder-kegs to extinguish the fire. In this they were supposed, by the workmen nearest to them, to have succeeded, and all went back to their work, the men at the face removing the coal loosened by the shot, when, suddenly, an explosion occurred, which fatally injured the four men working at that point.

At the time of the explosion the upper or new cross-cut was through and nearly complete, there being only a bench of bottom coal two feet thick to lift. It was, at the narrowest place, eight feet wide, and was on the bottom coal four feet high. The men had left their naked lamps down on the brattice near the middle cross-cut, and were working by their safety-lamps. It is very evident that a considerable quantity of gas had accumulated there, and it is just as clear that it could not have been in the inside place; otherwise the men could not have been there at work, and foul air felt by a miner outside proved the same thing; hence the gas must have been in the outside of the two places, caused to accumulate there from the great heat from the fire that had been and was there at that time in the loose or bottom coal in the cross-cut. The men in the air-way and main gangway, just inside on the same current, and the man opening a chamber near by outside, all declare that the air current was as strong and steady as usual, and no defect was noticeable in it all day. The current here varies from 20,000 to 25,000 cubic feet per minute, being 25,875 the second day after the explosion, with the same speed of the fan. It is pretty certain that the gas was caused to accumulate from the great heat, causing a tension, besides causing more of it to discharge from the strata, forcing the air down into the middle cross-cut; and that the men had cut the brattice in the outside place to make up the stopping in the cross-cut, thus leaving the outside of the two without sufficient air to force the heat and gas down.


CURVE SHOWING THE BEST ANGLES OF "WEATHER"
BEST ANGLES FOR WIND-MILL BLADES. AS COMPUTED BY ARWOLFE M.E. N.Y.
CURVE SHOWING THE BEST ANGLE OF IMPULSE.
RATIO OF VELOCITY OF WIND TO VELOCITY OF WHEEL.

## BEST ANGLES FOR WINDMILL BLADES.

By Alfred R. Wolff, M.E.

In a "Dissertation on the Theory and Practice of Windmills," published in the Engineering and Mining Journal, September 23d to October 14th, 1876, the writer developed the formula:

$$\tan. a = \frac{v}{c} + \sqrt{1 + \left(\frac{v}{c}\right)^2} \quad (2)$$

from which the best angle of impulse might be ascertained.

In this formula (Equation 2),

$a$ represents the angle of impulse of the wind upon the windmill blade (or sail), at any point of the blade, for maximum effect.

$v$ = the velocity of the blade (at such point) in feet per second.

$c$ = the velocity of the wind in feet per second.

The table given below has been computed on the basis of Equation 2, and sets forth the best "angle of weather," that is, the angle which an element of the blade or sail makes with the plane of motion of the blade. This angle, which we will term $w$, is the complement of the best angle of impulse, that is, $w = 90° - a$.

Let $l$ = total length of blade from center of windmill shaft to outer extremity of blade.

Then, in the table,

$w_0$ represents the best "angle of weather," at a distance $\frac{1}{7} l$ from the center of the shaft, and $w_1$ $w_2$ . . . . . $w_6$ represent the best "angles of weather" at distances $\frac{2}{7} l$, $\frac{3}{7} l$ . . . . . $l$ respectively from the center of the shaft.

The subjoined diagram shows graphically the best angles of impulse and weather as determined above. The ordinates represent angles in degrees, and the abscissæ the relative velocities of the wind and sail $\frac{v}{c}$. Thus, assuming the average velocity of the wind at a proposed location of a windmill to be 31·416 feet per second, the desired number of revolutions of a mill of 35 feet diameter to be 30 per minute, then $\frac{v_0}{c} = \cdot 25$, and we find from the table or from the diagram that $w_0 = 37° 58' 55''$, $w_1 = 31° 43' 3''$ . . . . . $w_6 = 14° 52' 21''$, and by computation from the table and directly from the diagram $a_0$ (the angle of impulse of the wind and sail at a distance of $\frac{1}{7} l$ from the center of the shaft) $= 52° 1' 5''$, $a_1$ (the angle of impulse at a distance $\frac{2}{7} l$ from the axis of shaft) $= 58° 16' 57''$ . . . . . $a_6$ (the angle of impulse at the outer extremity of blade) $= 75° 7' 39''$.

It has been already stated by the writer in a former paper, above referred to, that there is no difference of effect between that caused by the blades moving against the air and that caused by the air (or wind) striking upon the blades (assuming the same velocity in both cases), and therefore the angles set forth in the table and diagram will be found to be those of maximum efficiency for ventilating purposes as well as for windmills.

TABLE SHOWING THE BEST ANGLES OF "WEATHER" FOR WINDMILL BLADES FOR GIVEN RELATIVE VELOCITIES OF BLADES AND WIND.

| $\frac{v_0}{c}$ = | $w_0$ = | | | $w_1$ = | | | $w_2$ = | | | $w_3$ = | | | $w_4$ = | | | $w_5$ = | | | $w_6$ = | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Degrees. | Minutes. | Seconds. | Degrees. | Minutes. | Seconds. | Degrees. | Minutes. | Seconds. | Degrees. | Minutes. | Seconds | Degrees. | Minutes. | Seconds. | Degrees. | Minutes. | Seconds. | Degrees. | Minutes. | Seconds |
| ·10 | 42 | 8 | 41 | 39 | 20 | 42 | 36 | 39 | 1 | 34 | 5 | 57 | 31 | 43 | 3 | 29 | 31 | 5 | 27 | 30 | 14 |
| ·11 | 41 | 51 | 41 | 38 | 47 | 47 | 35 | 52 | 7 | 33 | 7 | 31 | 30 | 35 | 41 | 28 | 17 | 15 | 26 | 12 | 7 |
| ·12 | 41 | 34 | 44 | 38 | 15 | 7 | 35 | 6 | 2 | 32 | 10 | 46 | 29 | 31 | 5 | 27 | 7 | 23 | 24 | 59 | 6 |
| ·13 | 41 | 17 | 48 | 37 | 42 | 46 | 34 | 20 | 49 | 31 | 15 | 51 | 28 | 29 | 17 | 26 | 1 | 22 | 23 | 50 | 46 |
| ·14 | 41 | 0 | 55 | 37 | 10 | 44 | 33 | 36 | 32 | 30 | 22 | 32 | 27 | 30 | 14 | 24 | 59 | 6 | 22 | 47 | 22 |
| ·15 | 40 | 44 | 4 | 36 | 39 | 1 | 32 | 53 | 10 | 29 | 31 | 5 | 26 | 33 | 54 | 24 | 0 | 23 | 21 | 48 | 5 |
| ·16 | 40 | 27 | 17 | 36 | 7 | 40 | 32 | 10 | 46 | 28 | 41 | 25 | 25 | 40 | 12 | 23 | 5 | 4 | 20 | 52 | 48 |
| ·17 | 40 | 10 | 33 | 35 | 36 | 40 | 31 | 29 | 21 | 27 | 53 | 31 | 24 | 49 | 4 | 22 | 12 | 59 | 20 | 1 | 15 |
| ·18 | 39 | 53 | 53 | 35 | 6 | 2 | 30 | 48 | 56 | 27 | 7 | 23 | 24 | 0 | 23 | 21 | 23 | 55 | 19 | 13 | 7 |
| ·19 | 39 | 37 | 16 | 34 | 35 | 47 | 30 | 9 | 29 | 26 | 22 | 57 | 23 | 14 | 4 | 20 | 37 | 43 | 18 | 28 | 10 |
| ·20 | 39 | 20 | 42 | 34 | 5 | 57 | 29 | 31 | 5 | 25 | 40 | 12 | 22 | 30 | 0 | 19 | 54 | 10 | 17 | 46 | 8 |
| ·21 | 39 | 4 | 12 | 33 | 36 | 32 | 28 | 53 | 40 | 24 | 59 | 6 | 21 | 48 | 5 | 19 | 13 | 7 | 17 | 6 | 47 |
| ·22 | 38 | 47 | 47 | 33 | 7 | 31 | 28 | 17 | 15 | 24 | 19 | 34 | 21 | 8 | 13 | 18 | 34 | 24 | 16 | 29 | 56 |
| ·23 | 38 | 31 | 25 | 32 | 38 | 56 | 27 | 41 | 50 | 23 | 41 | 35 | 20 | 30 | 16 | 17 | 57 | 51 | 15 | 55 | 21 |
| ·24 | 38 | 15 | 7 | 32 | 10 | 46 | 27 | 7 | 23 | 23 | 5 | 4 | 19 | 54 | 10 | 17 | 23 | 20 | 15 | 22 | 53 |
| ·25 | 37 | 58 | 55 | 31 | 43 | 3 | 26 | 33 | 54 | 22 | 30 | 0 | 19 | 19 | 48 | 16 | 50 | 42 | 14 | 52 | 21 |
| ·26 | 37 | 42 | 46 | 31 | 15 | 51 | 26 | 1 | 22 | 21 | 56 | 18 | 18 | 47 | 3 | 16 | 19 | 50 | 14 | 23 | 36 |
| ·27 | 37 | 26 | 43 | 30 | 48 | 56 | 25 | 29 | 46 | 21 | 23 | 55 | 18 | 15 | 52 | 15 | 50 | 35 | 13 | 56 | 30 |
| ·28 | 37 | 10 | 44 | 30 | 22 | 32 | 24 | 59 | 6 | 20 | 52 | 48 | 17 | 46 | 8 | 15 | 22 | 53 | 13 | 30 | 56 |
| ·29 | 36 | 54 | 50 | 29 | 56 | 35 | 24 | 29 | 18 | 20 | 22 | 54 | 17 | 17 | 46 | 14 | 56 | 36 | 13 | 6 | 46 |
| ·30 | 36 | 39 | 1 | 29 | 31 | 5 | 24 | 0 | 23 | 19 | 54 | 10 | 16 | 50 | 42 | 14 | 31 | 38 | 12 | 43 | 54 |
| ·31 | 36 | 23 | 18 | 29 | 6 | 2 | 23 | 32 | 19 | 19 | 26 | 32 | 16 | 24 | 51 | 14 | 7 | 55 | 12 | 22 | 15 |
| ·32 | 36 | 7 | 40 | 28 | 41 | 25 | 23 | 5 | 4 | 18 | 59 | 58 | 16 | 0 | 10 | 13 | 45 | 21 | 12 | 1 | 43 |
| ·33 | 35 | 52 | 7 | 28 | 17 | 15 | 22 | 38 | 38 | 18 | 34 | 24 | 15 | 36 | 33 | 13 | 23 | 53 | 11 | 42 | 14 |
| ·34 | 35 | 36 | 40 | 27 | 53 | 31 | 22 | 12 | 59 | 18 | 9 | 48 | 15 | 13 | 58 | 13 | 3 | 25 | 11 | 23 | 43 |
| ·35 | 35 | 21 | 18 | 27 | 30 | 14 | 21 | 48 | 5 | 17 | 46 | 8 | 14 | 52 | 21 | 12 | 43 | 54 | 11 | 6 | 6 |
| ·36 | 35 | 6 | 2 | 27 | 7 | 23 | 21 | 23 | 55 | 17 | 23 | 20 | 14 | 31 | 38 | 12 | 25 | 16 | 10 | 49 | 20 |
| ·37 | 34 | 50 | 53 | 26 | 44 | 57 | 21 | 0 | 28 | 17 | 1 | 23 | 14 | 11 | 47 | 11 | 7 | 29 | 10 | 33 | 21 |
| ·38 | 34 | 35 | 47 | 26 | 22 | 57 | 20 | 37 | 43 | 16 | 40 | 13 | 13 | 52 | 45 | 11 | 50 | 28 | 10 | 18 | 12 |
| ·39 | 34 | 20 | 49 | 26 | 1 | 22 | 20 | 15 | 37 | 16 | 19 | 50 | 13 | 34 | 30 | 11 | 34 | 11 | 10 | 3 | 32 |
| ·40 | 34 | 5 | 57 | 25 | 40 | 12 | 19 | 54 | 10 | 16 | 0 | 10 | 13 | 16 | 57 | 11 | 18 | 36 | 9 | 49 | 37 |
| ·41 | 33 | 51 | 12 | 25 | 19 | 27 | 19 | 33 | 21 | 15 | 41 | 11 | 13 | 0 | 6 | 11 | 3 | 40 | 9 | 36 | 18 |
| ·42 | 33 | 36 | 32 | 24 | 59 | 6 | 19 | 13 | 7 | 15 | 22 | 53 | 12 | 43 | 54 | 10 | 49 | 20 | 9 | 23 | 33 |
| ·43 | 33 | 21 | 58 | 24 | 39 | 8 | 18 | 53 | 29 | 15 | 5 | 12 | 12 | 28 | 19 | 10 | 35 | 35 | 9 | 11 | 20 |
| ·44 | 33 | 7 | 31 | 24 | 19 | 34 | 18 | 34 | 24 | 14 | 48 | 8 | 12 | 13 | 19 | 10 | 22 | 23 | 8 | 59 | 37 |
| ·45 | 32 | 53 | 10 | 24 | 0 | 23 | 18 | 15 | 52 | 14 | 31 | 38 | 11 | 58 | 53 | 10 | 9 | 42 | 8 | 48 | 23 |
| ·46 | 32 | 38 | 51 | 23 | 41 | 35 | 17 | 57 | 51 | 14 | 15 | 42 | 11 | 44 | 57 | 9 | 57 | 30 | 8 | 37 | 35 |
| ·47 | 32 | 24 | 48 | 23 | 23 | 9 | 17 | 40 | 21 | 14 | 0 | 17 | 11 | 31 | 32 | 9 | 45 | 45 | 8 | 27 | 12 |
| ·48 | 32 | 10 | 46 | 23 | 5 | 4 | 17 | 23 | 20 | 13 | 45 | 21 | 11 | 18 | 36 | 9 | 34 | 27 | 8 | 17 | 13 |
| ·49 | 31 | 56 | 51 | 22 | 47 | 22 | 17 | 6 | 47 | 13 | 30 | 56 | 11 | 6 | 6 | 9 | 23 | 33 | 8 | 7 | 37 |
| ·50 | 31 | 43 | 3 | 22 | 30 | 0 | 16 | 50 | 42 | 13 | 16 | 57 | 10 | 54 | 3 | 9 | 13 | 3 | 7 | 58 | 22 |

## ABSTRACTS OF PAPERS READ AT THE MEETINGS OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

### NOTE UPON A PECULIAR VARIETY OF ANTHRACITE. BY ECKLEY B. COXE.

I wish to call the attention of the Institute to a peculiar variety of anthracite which occurs in the Buck Mountain vein at our collieries at Drifton, and in the same and other veins in different localities in the anthracite coal-fields. It is known among the workmen as iron-gray or cast-iron. It has a dull, greasy appearance, as if a piece of ordinary anthracite had been rubbed with a dirty and greasy rag and allowed to dry. It was formerly considered a very impure coal containing a high percentage of ash; was picked out of the coal and thrown away. But the following analysis of it and its ash, made by Mr. J. BLODGET BRITTON, of Philadelphia, shows that such is not the case, the percentage of ash not being much higher than that of the ordinary anthracites as they are prepared for market.

ANALYSIS OF COAL.

| | | | |
|---|---|---|---|
| Water | 4·36 | Fixed carbon by difference | 84·90 |
| Volatile combustible matter | 3·48 | | |
| Ash | 7·26 | | 100·00 |

The carbon proved to some extent to be of the nature of graphite, and slowly combustible.

ANALYSIS OF ASH.

| | | | |
|---|---|---|---|
| Silica | 25·66 | Sulphur | ·17 |
| Alumina | 27·03 | Phosphorous acid | ·21 |
| Ferric oxide | 42·83 | Alkali, undetermined matter, and loss | ·60 |
| Lime | 1·56 | | |
| Magnesia | 1·83 | | |
| Manganous oxide | ·11 | | 100·00 |

We recently collected a quantity of the substance, and made a fire with it, in an ordinary stove, which was kept up several days. We found that it burned with intense heat, and apparently as freely as our other coal does. Mr. BRITTON is probably right in his view expressed in the analysis, that the difference in appearance is not due to impurities in the coal, but to the fact that the carbon is in a more or less graphitic form, as many of the standard coals are no purer.

I bring this before the Institute as I know that a large quantity of this valuable fuel is thrown away every year, on account of its supposed impurities.

### ON THE POSSIBLE ECONOMY IN CHARCOAL MANUFACTURE. BY MR. J. BIRKINBINE, OF LEBANON, PA.

The interest excited by Mr. FERNOW'S paper on red charcoal, read at the Philadelphia meeting, induced the writer to try to show how further economies in the preparation and use of charcoal may be made.

The fact that one third of the furnaces in existence in the United States use charcoal, and produce one sixth of the pig-iron made, besides the 122 forges and bloomaries producing 130,000 tons of blooms, makes the investigation of this matter an important one.

The researches into the operations of the various charcoal furnaces are made difficult by the inconstancy of the "bushel" used, there being no standard. However, taking four cords of wood per ton of pig-iron—which is rather a low figure—the charcoal blast-furnaces of the United States consume annually four million cords, the forges and bloomaries 400,000 more; and, making allowance for destructive fires, one cord of wood per acre per annum is only utilized, and, therefore, the denudation of 147,000 acres, or 230 square miles of thirty-year-old timber, will be necessitated by the wood-using iron manufacture.

The writer then discussed the difference of charcoal burning in pits (meilers) and in kilns or retorts; 80 per cent of the coal used in the United States being probably prepared in the former way. Two points of objection are generally urged against the latter method: the cost of hauling the wood to the retorts, and the inferior quality of coal obtained from it.

As for the latter belief, there hardly seems to be a good reason why, by properly regulating the heat applied to a retort, the carbonization of the wood it contains should not be under perfect control; and as in a meiler so much of the wood is consumed in carbonizing the rest that the ordinary yield of charcoal is less than 20 per cent of weight, and as this percentage of yield can be doubled in retorts and the otherwise wasted by-products utilized, it would seem that the employment of closed vessels would be the process of the future.

The objection of the larger expense in the construction and maintenance of the first plant is compensated by the utilization of the by-products. The number of acetates used in commerce encourages the faith in the continuance of a good market for all materials manufactured from the products of wood distillation, and the increased yield from the same acreage of woodland would augment the value of the timber lands available for charcoal production.

The pyroligneous acid is used as one of the best preserving agents; wood-spirit for fixing colors, dissolving varnishes, etc.; the various acetates in calico-printing, dyeing, manufacture of dyes and colors, and as disinfectants.

Local demands or the production of certain metals will influence the character of the product worked for; so would the Missouri charcoal furnaces furnish cheaply sugar of lead, while in the Lake Superior region verdigris and Paris green will be easily produced.

The writer then gives a list of merchantable acetates, with the necessary quantities of acid to manufacture them, and their market prices.

The objection, that the hauling of the wood to the operating plant will be too costly, seems not tenable as soon as the by-products are utilized and help to cover the expenses; besides, transportable retorts could be constructed and placed in the proper districts to obviate this objection.

The writer recognizes the fact that, as yet, the greater number of experiments in this direction have proved to be failures. He attributes these failures to the following causes:

1. Deterioration of the products either by too rapid charring or by unequal charring, owing to the arrangement for applying the heat or by operating for the by-products, the quality of the coal not being a point of consideration.

2. Operating with an apparatus the success of which depends upon chemical combination without knowledge of chemistry.

3. Constructing the apparatus rather to save money in the plant than to reduce cost of manufacture.

### ON THE COST OF WATER-WORKS OF EDGAR THOMSON STEEL COMPANY, PITTSBURG, PA., 1873–75. BY P. BARNES.

| No. | Class. | Amount. | No. | Class. | Amount. |
|---|---|---|---|---|---|
| 1. | Cement | $859 | 12. | Coal | $174 |
| 2. | Sand | 71 | 13. | Lumber | 1,558 |
| 3. | Stone masonry | 5,054 | 14. | Castings | 349 |
| 4. | Red brick | 1,142 | 15. | Hardware | 253 |
| 5. | Sewer-pipe conduit | 1,408 | 16. | | 737 |
| 6. | Pump-well | 418 | 17. | Conduit contract | 6,878 |
| 7. | " inclosing tank | 1,254 | 18. | " day work | 283 |
| 8. | Duplex pumps | 3,467 | 19. | Common labor | 2,012 |
| 9. | Iron pipes | 845 | 20. | Skilled labor | 2,134 |
| 10. | Water-tank | 820 | | | |
| 11. | Temporary boiler | 170 | | Total | $29,886 |

THE FIRST ARTIFICIAL PRECIOUS STONES.—The first precious stone reproduced, not only in its appearance but its real nature, and in all its component parts, is the lapis lazuli, the sapphire of the ancients, not to be confounded with the sapphire of our modern jewelers. This untransparent stone, of a magnificent azure-blue color, was most highly prized by the ancient Hindoos, Assyrians, Persians, Jews, Egyptians, Greeks, etc.; and this irrefragably refutes the erroneous theory of some archæologists that the ancients were unable to distinguish the blue color. When pulverized, this stone furnishes the surpassingly beautiful ultramarine color with which the artists of the middle ages delighted to paint the mantle or gown of the Virgin Mary, although they had to pay the most extravagant prices for the pigment, which they always charged in the bills of those who had ordered a sacred picture from them. Some fifty or sixty years ago, Gmelin, the German chemist, discovered that this most beautiful of blue colors could be artificially produced by heating argillaceous earth with soda, sulphur, and carbon; and now that Guimet, the French chemist, has practically introduced this process, Europe manufactures annually about 100,000,000 pounds of this pigment, most of which is produced in Germany.—*Carus Sterne, in Popular Science Monthly for September.*

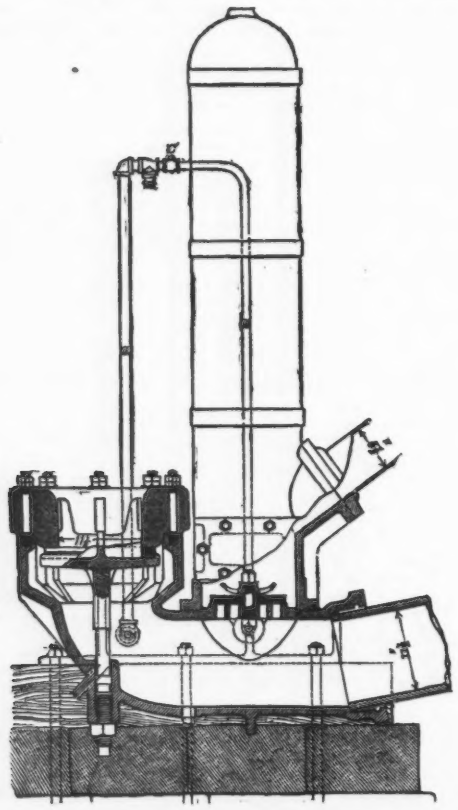
## A MONTGOLFIER HYDRAULIC RAM.

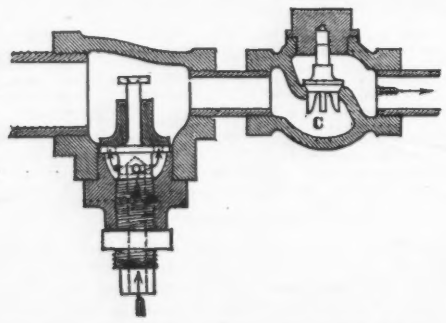
By Washington Jones, in the Franklin Institute Journal.

Recently, the I. P. Morris Company made at their Port Richmond iron works, to be used for the purpose of irrigating the higher lands of a coffee plantation in South America, a hydraulic ram, whose capacity is greater than that of any other known to them. The following data were furnished by the purchaser with his order. As will be noticed, they cover the most important points, except the quantity of water available, which, therefore, was assumed to be ample :

| | | | |
|---|---|---|---|
| Height of fall | 9 | ft. 10 | in. |
| Elevation of reservoir | 63 | " 10 | " |
| Diameter of inlet-pipe | | 11⅛ | " |
| Length " " | 52 | " 4 | " |
| Diameter of ascension pipe | | 5½ | " |
| Length " " | 127 | " 8 | " |
| Diameter of waste-valve | | 11⅛ | " |
| Contents of air-vessel | 4 1/10 | cu. ft. | |

The capacity of the air-vessel was increased to 5½ cu. ft., as the additional expense of the material was amply compensated by the known advantage of a large air-cushion, in partially relieving this type of machine from the violent shocks inseparable from its action. The minor details, and their disposition, were determined upon by the constructors, after consideration and information obtained by reference to Crecy, London *Engineer*, and Spon's *Dictionary of Engineering*, wherein were found descriptions of several which, though of small capacity, were of assistance






in forming a conclusion. The results were embodied in the machine, of which the following is a description. A reference to the cut will make the construction more readily understood :

The body of the ram is a cylindrical pipe 11½ inches bore and 1⅛ inches thick, strengthened with flanges. It curves upward, at the rear or discharge end, until the axis of bore becomes vertical, when the bore is enlarged to 19½ inches, so as to form a chamber for the waste-valve. Several vertical ribs join the flange, provided for the valve-seat at top of chamber, with the main body of the ram. About midway the length of the body is the seat for water-valve and the air-vessel. A horizontal flange on each side of the body, strongly ribbed, serves to hold the machine to timbers which rest upon stone foundations. Six bolts pass through all, with keys and plates at lower ends. The water-valve is of gum and seats upon a grating cast on the body of ram, and is held in position by a stud carrying a guard. The valve is incased by the air-vessel, and access to it is had through a door. The body of the waste-valve is of cast-iron, strongly ribbed, and is guided, at its upper end, by wings sliding within the bore of valve-seat, and, at its lower end, by a stem working in a hole bored in the body of ram. This hole is fitted at its lower end with a long tap-bolt, which is used to adjust the drop of the valve and the number of beats per minute at such a point, found by trial, where best efficiency of ram is obtained. A piece of gum, interposed between the ends of stem and tap-bolt, serves to soften the blow of descending valve. The face of waste-valve is a ring of wrought-iron, riveted to the valve with three thicknesses of heavy sole-leather between them, so as to give some elasticity, and thereby diminish the shocks given by the valve closing. The waste-valve seat is of cast-iron, made heavy (about five times the weight of the valve), and firmly bolted to the body of the ram. The supply is carried through cast-iron pipes, having socket-joints, and their thickness diminishes from 1⅛ inches at the junction with ram, to ⅝ inch at the upper end. The ascension-pipe is welded wrought-iron tube, 5½ inches diameter, joined by flanges. The apparatus for supplying air to the air-vessel is essentially that designed by Mr. Bolee (see Spon's *Dictionary of Engineering*, article "Hydraulic Machines," folio 1972), with a modification of the "snifting valve," which compels all the air admitted through it to enter the air-vessel ; or, if in excess, as in this case provided so, the surplus escapes between the under side of valve-seat and the top of screw-plug, on which the valve is mounted, through an opening adjustable by means of the screwed shank of the valve-seat. The supply air passes upward through the hollow shank ; thence outward, through holes, into the space below the valve-seat ; the valve-seat is perforated with several holes, through which the air rises and lifts the valve. When the valve closes, the return of any air is prevented ; but if the seat be raised from the top of the plug, a portion of it, more or less, as desired, passes between them and escapes (see enlarged view of snifting-valve). The valve is placed high enough to be above floods, and its operation is as follows : The tube *a* is of 1-inch gas-pipe, and it rises, from the point of its attachment to body of ram, to a suitable height, and carries the snifting-valve and a check-valve ; it is then joined by a ½-inch gas-pipe *b*, which descends and meets a check-valve, attached to the ram, immediately under the air-vessel. When the waste-valve opens, the water contained in the pipe *a* falls, and produces a vacuum, when the air enters, through the snifting-valve, into pipe *a*. When the stroke recurs and waste-valve closes, the water rises in pipe *a*, and displaces the air, which, under pressure, opens the check-valve *c*, whence it passes, through pipe *b* and check-valve *d*, into body of ram, and ascends into the air-vessel. This occurs each stroke, so that supply of air is continuous. Any surplus is discharged by the modification before described.

Upon completion, the apparatus was set up in position, and pipes attached ; about 35 feet of ascension-pipe, placed vertically, and 48 feet of supply-pipe, connected with a tank holding enough water for five minutes' run, set 10 feet high (or the height of fall) above ram. Short trials were made, mainly to prove the work, and, if possible, to get adjustment of waste-valve, giving best results as to quantity of water raised with least hammer of valve ; but the limited supply of water, and the temporary manner in which the arrangements were obliged to be made, prevented any rigid test, and, consequently, no results of value were obtained.

## STEAM AS A LIGHT REFLECTOR.

As every thing pertaining to the improvement of the methods and paraphernalia of illumination is at the present time looked upon with special interest, we reproduce, for the benefit of our readers, an account of a recent patent granted in Germany to Herr L. Brandau, of Berlin, in which he proposes to utilize the emissive properties of steam for illuminating purposes. In describing his plan, the patentee refers to the fact that steam in condensing forms dense white vapors, which possess the property, when exposed to an intense source of light, of partly reflecting and partly absorbing and subsequently emitting it, as the clouds behave toward the sunlight, diffusing a mild and uniform brightness. In adapting his system to overhead and side lights, Herr Brandau employs an apparatus consisting essentially of a glass chamber, into which steam is admitted, on passage way for its exit being also provided. This is then either illuminated directly, or with the aid of mirrors, by the source of light.

Novel as it may seem, the plan appears to us to have decided merit, and it is not impossible that the idea of Herr Brandau may contain in it the elements necessary for the successful moderation and diffusion of the blinding brilliancy of the electric light, which has in most situations proved to be a serious drawback to its usefulness.

The high absorptive and emissive properties of water vapors, both for heat and light, are well-known physical facts ; and the commonplace allusion to the sudden gleam of brightness that follows the escape of clouds of steam, especially noticeable when the sunlight is hidden, will serve as a familiar example of a principle that Herr Brandau proposes to turn to useful account.

Japan.—Japan is taking wonderful strides in civilization, and is at present engaged in some very important and costly public works. She has just completed railways from Yokohama to Tokio, and from Piogo to Kioto, and a telegraph line connects Hakodate with Nagasaki. Her coasts are lighted by 34 light-houses, 3 light-ships, 16 light-buoys, and 5 beacons, and Japanese steamers ply between the seaports of Japan and to China, Corea, and occasionally to England.

Billiton Tin Mines.—For several years past, a considerable quantity of tin has been found here. Forty years ago the island was in a very sterile condition, but, owing to the efforts of Prince Henry of Holland, the general condition has been much changed. The tin mines are situated in four districts, called Mangar, Boeding, Tandjang-Padan, and Dindang. The most important tin mines are at Mangar. The percentage of pure tin is 40 to 70. The so-called tin stone is exhibited ; but I am informed that several difficulties are to be contended with, and for that reason, up to the present, it has been impossible to mine this with profit. Since 1854 the product of tin has been 1000 piculs (a picul is equal to 61·513ᵏ) for the first year, and, for the 20 years after, 62,000 piculs. The total product is taken to Batavia, and there sold, the price paid ranging from 89 francs to 200 per picul.

## THE TEREDO AND ITS DEPREDATIONS.*

By Dr. E. H. Von Baumhauer, Commissioner to the Centennial Exhibition from Holland.

(*Continued from page* 276.)

The consideration of the structure which we have related led Mr. HARTING to the conclusion that it would be difficult to imagine an instrument better adapted than this shell for boring galleries in wood. In fact, each valve presents, in a certain way, a combined auger-bit, gouge, and file. The ordinary steel file is made with two rows of notches, in order that the tool may cut simultaneously in two different directions; in this shell the same end is attained by the two rows of denticles, the action of which is equally in two directions perpendicular to each other; and our shell has another advantage, that it does not foul so readily with the filings as does the ordinary file.

Nevertheless, the winding direction of the galleries, in which it is not unusual to find right angles, or even somewhat acute angles; the defective cylindricity in the form of the galleries, which often appear as if composed of rings piled up one upon another, some larger and some smaller; the form of the end of each gallery, which is always perfectly smooth and hemispherical without any projection in the center—all these

FIG. 1.

FIG. 2.

FIG. 5.

facts show, according to HARTING, that the action brought to bear upon wood by the teredo is not that of an auger boring a hole by rotary motion, but rather that of a file; this is rendered more apparent from the results of the careful anatomical study given by HARTING to the muscular system of the teredo.

Although confined during its entire life to the dwelling which it has itself constructed, the teredo still has a strongly-developed muscular system. It is evident, moreover, that he uses all his muscles, excepting only

FIG. 10.

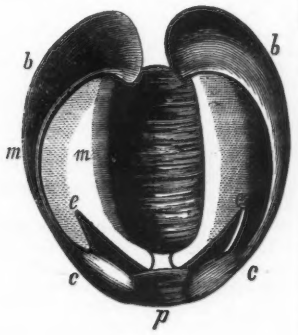



FIG. 11.

those which serve to move the siphons, more or less directly, in the perforation of his galleries.

The first system of muscles is that which one finds in the mantle. That organ is provided through its whole length with longitudinal and transverse muscular fibers. These fibers give the teredo the power of elongating or shortening its body; and also, by the partial action of some bundles of fibers, to make a slight movement of torsion.

At the base of the palettes, at the posterior portion of the mantle, is a powerful muscular ring (Fig. 10, *c*); by means of this ring, when the posterior extremities are expanded, the siphons (Fig. 10, *e* and *d*) can be carried outside into the water; at the same time the access of the two siphons, and consequently the entrance and exit of water, can be more or less hindered. As we have seen, the mantle is prolonged in the direction of the shell in an appendage which extends over the two sides of the dorsal surface of the valves (Fig. 1, *a*, and Fig. 2, *a*), the central portion of which forms a swelling of considerable thickness, composed of various anatomical elements; beneath the epidermis the tissues are partly of vesicular and partly of membranous character, which, through inherent powers of swelling and hardening under the action of the blood, serve a purpose in operating the movement of the valves.

To explain the physiological rôle of this organ (*a*, Figs. 1 and 2), it is necessary to recall the fact that it receives on either side, in the arched folds of the mantle, the neck-portions of the valves of the shells. By the contraction of the bundles of muscular fibers, the two valves would separate slightly one from the other, a movement which is still better understood if it is proved that that organ can become hard by the afflux of the blood and thus furnish a better fulcrum for the action of the muscles. Up to a certain point this part is similar to the hinge-ligament of other bivalve mollusks; but only in this respect, that it serves to open the shell. For the true ligament, wherever it exists, is always composed of elastic tissue, and its action is purely passive, while with the teredo the opening of the shell is a muscular action, and consequently active. Moreover, the hinge is wanting in this case, which allows the supposition that the animal has the power of modifying at will, by the partial contraction of its muscles, the direction in which the valves separate, so that it may be at one time the middle parts, and at another the anterior parts of the valves which separate most from each other. Besides, the effort which this action demands is extremely feeble, and the movement of the valves themselves is very limited.

There are two adductor muscles. The first and largest is already well known; it has been described by all writers who have made the teredo an object of study. It extends (Fig. 11, *m*) between the two valves in the form of a muscular mass relatively quite large, and occupies about two thirds of the length of the shell and one third of its width. It rests on either side on a sort of pad situated at the limit between the middle and neck parts of the valve. The second or small adductor muscle, which appears to have escaped the attention of most observers, is found near the dorsal side of the shell in the cavity between the anterior portions of the valves. One can see its exterior surface, clothed with a thin epidermis and slightly projecting immediately in front of the pallial prolongation, which extends over the dorsal face of the shell; in appearance it is only a continuation of this muscle, but in reality it is entirely distinct.

The principal mass of this muscle is implanted upon the sides, bent backward within the anterior, spiral parts of the valves (Fig. 11, *p*) below the line which passes by the two tuberculous extremities, coupled together; that is, by the center of rotation of the valves. From this principal mass some slender muscular fibers extend over the two thorny protuberances (Fig. 11, *e*, *e*), which may be compared to two arms of levers, whose common fulcrum is found in the center of rotation of the valves. It is clear that, by this arrangement, the action of the muscle is considerably strengthened.

The two adductor muscles are composed of the same microscopic elements, that is, of fibers and fibro-cellular tissue, easily separated in form of a ribbon, six mmm. wide and one mmm. thick; their length is relatively considerable, and probably equal to that of the muscles themselves, inasmuch as one can nowhere discover any free extremities. These fibers are distinguished from the fibro-cellular tissue of the mantle not only by their greater length, but also by their darker outlines, which indicate thicker walls, and, consequently, greater solidity and strength.

The effect produced by these muscles in contracting is very evident. The large adductor muscle, situated on a plane a little above the general center of rotation of the valves, serves to draw together the rounded sides of the valves as well as all the other parts of the valves situated posteriorly on the same side of the center of rotation. The small adductor muscle, placed in front of the center of rotation, exercises a more limited action. When it contracts, the anterior extremities of the spiral part of the valves approach each other; simultaneously, all the parts of the shell situated behind experience a slight displacement forward, as if they tried to turn about an axis passing by the center of rotation; but the one which they thus describe is necessarily very small, on account of the shortness of the muscle. It is evident that the direction of the movement made by one of these adductor muscles is nearly a right angle with that of the other; the anterior and middle parts of the valves, which are first acted upon by the action of the muscles, meet at an angle of 90°.

Finally, the teredo has also a muscular organ, without which it would be impossible for him to pierce his galleries. It is the part known as the foot, which has the power of projecting outside between the anterior opening of the valves (Fig. 5, *b*; Fig. 1, *d*—the dotted line indicating the outline of the foot in the state of extension). This foot has the power of extension and retraction, and terminates at the end with a suction-disk, by the aid of which the animal can attach itself to the wood.—*Popular Science Monthly.*

(TO BE CONTINUED.)

* Extract from the Archives of Holland, Vol. I. Translated by Edward R. Andrews.

## UTAH MINING NOTES.

Special Correspondence of the Engineering and Mining Journal.

### THE "OLD TELEGRAPH" MINE BONANZA.

Bingham Cañon, or West Mountain mining district, the most extensive ore-producing camp in Utah, is situated in the Oquirrh range of mountains, 25 miles southwest of Salt Lake City. Among the prominent mines are the Old Telegraph, Jordan and Galena, Stewart, Live Pine, St. Mark, Spanish, etc. The largest ore-producing mine, and one of the most valuable mines in Utah, is the Old Telegraph, located in Bear Fork, a tributary of Bingham Cañon. The mine is connected with a tramway about two miles in length, which connects with the narrow gauge at Bingham, and thence the ores are transported to the smelters on the banks of the Jordan, about fifteen miles from the mine. The smelters, concentrators, mills, and leaching works, located on the Jordan, fifteen miles south of Salt Lake City, are owned by the same parties who control the Old Telegraph mine. The management of this property is exercised by F. E. HOLDEN, Esq.; and no better evidence could be given of his ability and economical management of this property than the records and statistics of the mine during the time he has had charge.

The Old Telegraph works are entered by the Nez Perces Tunnel—dimensions, 6½ feet high by 4 feet 4 inches wide. The first 180 feet runs a little south by east, and then turns almost due south, and cuts the formation at nearly right angles; from thence it runs through a barren shaly quartzite for a distance of 280 feet to the ledge. At this point, on the right-hand side of the tunnel, a talc brown lining or selvage was struck, which was the first appearance of ledge matter in the tunnel. From this point, where the ledge was struck, the tunnel was continued about 20 feet in barren ledge matter, except that on the left side a small streak of ore was discovered. After cutting across the ledge to a belt of harder quartzite, which was supposed to be the foot-wall, a drift was started to the east along the foot-wall, and on the streak of ore. This

ore was a gray carbonate of lead mixed with the iron-stained ledge matter, and, as the drift was continued, began to enlarge, so that at a distance of 45 feet from the turn, and from the point where the ledge was cut, it had grown large enough to fill the whole face of the drift. This body of ore subsequently proved to be at this point 20 feet across, from west to east, and 24 feet thick. The end of it has never been found, although it has been worked on the dip up and down over 400 feet, and still shows faces of ore from 15 to 30 feet thick. On some of the upper levels this same ore has connected with bodies of solid ore fifty-four feet thick, averaging fifty-two per cent of lead, and twenty to thirty ounces of silver per ton. Subsequent developments show that overlying this silver-lead ore were large bodies of silver ore running from fifteen to two hundred ounces per ton, and these belts of silver ore are from four to twenty-four feet in thickness. Out of this class of ore—which is a porous quartz carrying chlorides of silver—has come the success of the leaching works. These silver ores were found on every level from the top of the hill to the lowest level in the mine. In the Montreal Tunnel, which is the lowest level of the mine, the body of ore is the largest of any portion of the mine. The tunnel is ninety feet in length, and in silver ore on top, bottom, and sides. Up to the time of striking ore in the Nez Perces tunnel, in the 310-foot level, ore had been found on top of the hill, but only in pockets, and those at very uncertain intervals. The mine is timbered with square sets. The timbers are ten inches square, of the best red pine. They are seven feet high by four feet wide. They are set one above the other, so as to take the weight of the mountain.

The sets are framed by a machine, the invention of Mr. Duzenberry, one of the engineers at the mines. It saves the work of ten men. There is a saw-mill at the mine where all timbers are squared, thus saving expense of hewing. It also utilizes the stubs for lagging, saving an expense of over a hundred dollars a day.

The mine has grown larger and larger each year of its development. Even now in the Black Stake it is two hundred feet across the vein from the foot to the hanging wall. The sets in this stope are twenty-seven in height. They are not certain they have the foot-wall. When this stake was first opened, for a long while a small vein just under the hanging-wall, and about three feet in thickness, was all that was known of that portion of the mine. One day, while Mr. McQueen was cutting away the foot-wall for the purpose of widening the tunnel so as to get room for a tunnel set, he broke through the rib of quartzite which had been taken for the foot-wall, and discovered some fine ore. He at once started a prospecting drift, and discovered that this body of ore was over twenty-four feet thick; and it has never given out in sinking or raising. The dip of the vein is about thirty degrees. There have been taken from this mine since February, 1876, forty thousand tons of first-class ore, carrying about 45 per cent lead and from 18 to 20 ounces of silver per ton. There have also been made at the Telegraph furnaces on the Jordan, chiefly from the second-class ore taken from this mine, 636 car-loads of bullion, each weighing over ten tons. There have also, during the last seven months, been leached from the silver ores at the mine, over sixty thousand dollars ($60,000) of silver bars.

In 1876, this mine produced about sixteen (16) per cent of all the lead produced in the United States; and in 1877, while the products of the mine had been no less in tons, and the product of lead had materially increased over the preceding year, this mine produced twelve (12) per cent of all the lead in the United States. The following analysis was made by Otto Wuth, of Pittsburg, Pa., from equal parts taken from the sample pulp of 1000 tons of ore from this mine. I will only give the value in lead and silver: Each ton contains 21·14 ounces silver and 52·06 per cent metallic lead.

The mine is held by United States patents, comprising different locations, from the Revere to the Jordan ledge, a distance of 9900 feet. The mine is now producing about 120 tons per day, and every thing indicates a steady production of argentiferous and chloride-silver ores for years to come.

The carbonate mine located on Kesler's Peak, Big Cottonwood, Salt Lake County, produced last month 681 tons of ore, which was sold for forty-four thousand one hundred and fifty dollars. This is comparatively a new property, having been worked only two years. It is now considered one of Utah's most valuable mines.

Kearsage mine, Dry Cañon, Ophir District, working thirteen men. Developments are pushing vigorously on this property. The mine is producing some very good ore, and the indications now are favorable for opening another bonanza.

Archibald.

Salt Lake City, Oct. 16, 1878.

## BODIE, CALIFORNIA.

Special Correspondence of the Engineering and Mining Journal.

As one advances up the cañon from Aurora, one passes first the Miners' mill, of five stamps, distant from Bodie Bluff about five miles. This mill has never yet been employed. It is small, far from the mines, and seems to have been a bad speculation.

Close by the foot of the bluff, on the eastern slope, we pass the Kallmes or Bechtel mill, also of small size, five stamps it is said, which has run but a very short time. Toward the west, high up on the hill, we observe the works and dump of the Blackhawk and several other mines. The road now turns to the north for a short distance; soon, however, we change to a westerly course, and pass the Syndicate, a fine brick-inclosed mill of 20 stamps, which is now at work on the ores of the Bodie mine.

Not long after, we drive up to the post-office and office likewise of Wells, Fargo & Co., and find ourselves in the midst of the busy life of an active and excited mining community. The town of Bodie fills an almost level flat west of a series of ore-bearing hills. Its altitude is about 8700 feet above the level of the sea.

The population now numbers about 1500 souls. The houses are of the usual undressed lumber and canvas-lined variety so common in all new mining camps, with here and there a more pretentious painted front. Two banks are already established, and the town is quite ready to assume metropolitan airs.

Nevertheless, up to date, beds for the weary traveler are scarce, and must be spoken for in time, and paid for in advance. The restaurants are nothing to boast of, but such minor inconveniences are of little moment when one is intent upon exploring new districts. Saloons are plenty; gamblers abound, and the "lair of the tiger" may be visited at any time, day or night.

### EARLY HISTORY.

According to Mr. Joseph Wasson, author of an excellent pamphlet describing Bodie District, the first quartz claim discovered and located was named the Montauk, now called the Goodshaw. One W. S. Body, a native of Poughkeepsie, N. Y., has the honor of being the first prospector in this vicinity—in July, 1859—and it is from him that the town takes its name. It was not until July 10th, 1860, however, that the district was regularly organized. Poor Body did not live to realize any thing from his property; for, in March, 1860, on his way to Monroeville, he was overtaken by a storm, lost his way, and perished. It would be a long story to repeat the varied ups and downs of the district, embracing the Stark & Tucker enterprise and failure; the Bodie Bluff Consolidated, with its 11,100 shares; and, last but not least, the famous Empire Company, of New York, with its $10,000,000 capital, 38,100 feet of claims, and its numberless mill sites, tunnel rights, etc.

All this is matter of history, and for the details we must refer the curious reader to the pages of Mr. Wasson,

### MODERN HISTORY OF BODIE.

Prof. W. P. Blake and J. Ross Browne inspected and approved of the district in 1863 and 1864; also Prof. Benjamin Silliman, who wrote an admirable report and description—and here we may add our mite of well-merited applause for the prophetic insight into futurity of the much-maligned Prof. Silliman. He always believed in Bodie; bad management, bad mills, and faulty mining engineering never shook his faith in the richness of the lodes of Bodie; and to-day, after many years, the irrefutable logic of events substantiates the correctness of his opinions. "Honor to whom honor," and to Prof. Silliman certainly much honor is due. Unfortunately the Empire Company's property was sold out by the sheriff in 1875, and many, if not all, of the mines were relocated, and are now probably lost to the stockholders of the old company.

The revival of Bodie was due to the success of the Standard Company. This series of mines was bought by Mr. John F. Boyd for the Cook Brothers and others in the autumn of 1876. The purchase price was $67,000. In November and December 1000 tons of ore were crushed in the Syndicate mill, which netted $45,000. In the spring following a 20-stamp mill was contracted for, which started crushing on the 1st of August, and on the 12th of September, almost to a day the anniversary of the purchase of the mine, a dividend of $1 per share ($50,000 in all) was declared, leaving on hand a surplus of $100,000. The mill cost about $58,000, which is a low figure, since they bought, for $6000, the old Del Monte mill, at Aurora, and utilized the iron of the battery, pans, etc. A new mill of like capacity (20 stamps) would now cost about $80,000. The mill is run by a Corliss engine of 125 to 150 horse-power. The ore is crushed through No. 30 screens, and is worked in the so-called combination pans—16 in number. The battery crushes 60 tons per day. There are, besides the pans, 8 settlers, 2 agitators, retorts, assay office, etc. Mr. J. M. Dawley has charge of this mill, as well as that of the Syndicate Company. The mills and their working are models of efficiency. The Standard bullion is worth about $12 per ounce. That of the Bodie has been worth about $9.50 per ounce, and during the last month, owing to an increase in the percentage of silver, its value is considerably lower. The ore for the Standard mill is transported from the mines (a distance of about half a mile) by means of a wire-rope tramway. The tramway runs on a grade of 7½°, has 50 buckets, and delivers, with ease, 60 tons of ore per day. The wooden supports are about 25 feet above the ground, and are placed about 150 feet apart. The entire cost of the apparatus was $7500.

K.

## GEORGIA GOLD MINES.

Special Correspondence of the Engineering and Mining Journal.

In addition to the list of stamp-mills should be added R. H. Moore's, four stamps. The Hand ditch was constructed by Dr. Van Dyke, who introduced the use of ditches from California. I understand that this gentleman has constructed 78 miles of ditches in this country, some of which, however, are now destroyed.

The Benning and Hand mills are at present in very poor repair. It is proposed to rebuild them. The plates are very dirty, but most of the gold is caught in the battery, and the tailings run through a rock-paved sluice from each mill. From the Hand mill the sluice saved $25 a month. The stamp-spindles and cams are lubricated with tar.

The Findley mill consists of six four-stamp batteries. It is run by a turbine about 3½ feet in diameter, with a head of about 14 feet. The rich chute, which has made the Findley mine famous, is of small dimensions. At the place where it is found, the slate and quartz vein have been distorted, forming a wave. In the hollow at one side of this wave the rich portion of the vein is found. The miners are now engaged in sinking down on the vein to work out this portion. At present the chute is poor, but the miners confidently expect to strike a rich pocket before long; they are working in very hard rock, which is very difficult to get through.

The Cincinnati Mining Company has but recently started. Its mill is run by steam-power. The cams and spindles are lubricated with molasses; the stamps fall 6 inches. The iron work of their mill, as is the case with nearly, if not quite all, the mills in this neighborhood, is made by Porter & Meakin, of Atlanta, according to designs furnished by Mr. Hall, of this town, who erected it.

The company has silver-plated plates, and these are kept perfectly clean, and the owners feel perfectly satisfied with their results. Their ore is of average value, and they extract it entirely by dry mining.

The Dahlonega Gold Mining Company is situated about five miles in a direct line southwest of Dahlonega. It is locally known as the Battle Branch Company, although there is another company entitled the Etowah and Battle Branch Mining Company, on an adjoining property. This company has quite recently begun operations. The mill has only been operating for about a month: it was built during July last;

it is worked by water, an undershot wheel being the recipient of the power. The mill is calculated for 15 stamps, but only 10 are in place. The plates are silver-plated and in pretty good condition, but I am told that the mill structure is not satisfactory. The mine is worked by the hydraulic process, which, probably owing to the circumstances of the case, is dissimilar to the method used elsewhere in this neighborhood. The water is delivered through a little giant with 2-inch nozzle, with a head of 130 feet. It is carried through about 900 feet of spiral, lap-welded iron pipe about 9 inches in diameter. When I arrived on the mine, I saw the president of the company, Mr. HENRY ALTMAN, hard at work, personally directing the operations of the workmen, and dislodging any ledges of rock partially loosened by the stream of water. The ore is abundant, but of low grade. Occasionally rich pockets are struck, which soon give out. This has been the history of the mine ever since the beginning. There are many small quartz-veins disseminated through beds of slate, and some of larger size. All the ore is carried down a sluice to the mill-floor by the water. There is only water enough to mine two hours a day yet.

J. B. MACKINTOSH, M.E.

## SILVER CLIFF—COLORADO'S LATEST WONDER.

Special Correspondence of the Engineering and Mining Journal.

This new camp and discovery is a wonder. When you stand upon any of the bluffs near the embryo town or on top of Round Mountain, and look down upon the busy scene before you to-day, and remember what it was on or before the 4th of July last, you begin to think that the tales of the Thousand and One Nights have turned your brain, and that you are looking upon the reflected picture of an over-wrought imagination. When first I came to the cliff on the 29th of July last, I had no idea of what was coming. I have a cynical nature, and I did not see enough to warrant my belief in the ultimate realizations of my friend BOB POWELL'S excited dreams of acres of horn-silver. Yet but little more than ten short weeks have passed, and I have to acknowledge that BOB'S visions have become realities. There are acres of horn-silver, and no mistake about it. There is more: there is a mountain at least 800 feet above its surrounding prairies, which seems a mass of silver-bearing agatized porphyry. Since the discovery upon the Plata Verde Ledge claim by Mr. WILLIAM J. ROBINSON, of tons of horn-silver ore, *rich*, not meager infusions, but *masses* of the ($Cl_2Ag$), I have to acknowledge that this mountain of silver ore-bearing rock is in existence, and that every inch of ground west of Round Mountain and east of the cliffs, 6000 feet wide, and, to judge from present indications, at least 3 miles in length, is very valuable mining ground. You may not find it right upon the surface, as at the Racine Boy and Silver Cliff claims; nor as on the Plata Verde claim, in the massive rock a foot under the grass; nor as in the Horn-silver claim, all over and all through in every piece of rock; but you will find it with developments; for the great silver infusion seems everywhere between the mountain and the cliff Of course, those who have claimed the ground must sell so long as they do not find pay from the grass-roots; for the rock is terribly hard to drill and blasts poorly, being full of seams and cavities, and it does not yield readily to the exertion of the poor prospector. Money, as elsewhere, is necessary to break this hard, agatized rock. I have surveyed for location 76 claims since July 29th last, and have 24 more on my order-book now. This shows what amount of ground has been claimed, and none of these claims lies outside of the belt. This gives, provided each claim would average 9 acres, 900 acres of mineral-bearing ground, upon each side of which horn-silver is being mined and shipped at the rate of 100 tons per day now, and out of but four openings or workings. This is done with a force of not over 40 men, so that 2½ tons of ore per man are taken out daily, which must average $250 net profit per man, according to the returns had from Professor MALLETT'S works at Cañon City. Now, capital, properly directed right here, will change this situation at least to ten-fold of its produce. There is no reasonable doubt about the whole discovery, but that it will prove the most complete success ever produced by the State of Colorado. It is simply wonderful, and, to judge from the hourly arrivals at the six-weeks-old town (which has at least 150 houses and 600 inhabitants), this mineralogical wonder is attracting attention elsewhere already. Conveyances at good figures are in order, and, as the writer is a notary public, he is in a position to know. Titles to the mining claims are, as a general thing, good here, as I take particular pains not to make overlapping location surveys. There are over 40 wagons now employed between Silver Cliff and Mallett's works, at Cañon City, to haul the ore from the Racine Boy, Silver Cliff, and the Horn-silver. The Plata Verde has not as yet shipped a pound of ore, having just finished its road-bed up to the shaft, at least 350 feet above the prairie. When this mine begins to ship ore, there will be at least 60 wagons necessary to haul all the ore *shipable* away. Of course, there are other claims which I hold will be producers in a short time; as, for instance, the King of the Valley, Etna, Jolly Cobbler, Vesuvius, La Belle France, Agate, Buffalo, Queen of the Valley, Chimborazo, Orizaba, Old Colony, Willy, Bob Powell, Plata Blanco, Mino Rico, Hecla, Buffalo Hunter, Sitting Bull, and others—if capital will but take hold of them and pitch in! The great need of this new camp is reduction works on the spot. The ore is all free milling, and needs no roasting; and men of enterprise and means will find right here a great field of usefulness.

CARL WULSTEN.

SILVER CLIFF, CUSTER COUNTY, COLO., Oct. 14, 1878.

## NOTES.

COLOSSAL BRONZE.—The Royal Foundry of Munich has just completed a colossal bronze of Alex. von Humboldt, 3½ meters in height. It is intended for the city of St. Louis.

THE DATE PALM.—The Department of Agriculture has received seed of the date-palm from Egypt. The Colorado desert is suggested as the place for the experiment of growing the seed.

A DRILL which bores square holes is among the novelties of the Paris Exhibition. The tool is the usual form of three-square drill, clamped or chucked in its holder "so that it will wabble," which appears to comprise the whole secret.

THE use of natural gas has been discontinued at the Millvale Mill of Graff, Bennett & Co., and the furnaces are now running on coal. Spang, Chalfant & Co.'s mill is still using the natural gas.

IRON WORKERS' WAGES REDUCTION IN ENGLAND.—LONDON, October 25.—The iron-masters of the North of England have decided to reduce the rate of wages 5 per cent on the 30th of November. The operatives will probably resist the reduction.

KISHPAUGH MINE R. R.—It is proposed to build a road about five miles long from the Kishpaugh mine, in Warren County, N. J., to the Delaware, Lackawanna, and Western, near Buttzville. The mine is owned by the Crane Iron Company, and yields a very fine quality of iron ore.

NOVELTY IN TELEGRAPH WIRE.—The National Tube Works, at McKeesport, have succeeded in making a novelty in insulated telegraph wire which bids fair to insure the doing away with the unsightly telegraph poles in the streets of our cities. It consists in rolling an iron tube around a glass tube which insulates one or more copper wires. The new wire is to be used in underground lines in Philadelphia. It is claimed for it that it is better insulated than the ordinary telegraph wire suspended in air, and that, therefore, less battery power will be needed than with the present system.

DRIVING-WHEELS ON THE PENNSYLVANIA RAILROAD.—Experiments with the locomotives having the five-and-a-half-foot driving-wheels have proved eminently satisfactory. Two of these engines were placed on the road about the 20th of July. For a time they did not work well, and it was found that the power was not evenly distributed in the driving-wheels. The wheels were too light, so they were removed and a new panel inserted in each wheel. This overcame the difficulties in a measure. Larger injection-pumps were added, and now these engines are the fastest on the road. The two-hour train is nearly always on time.

JAPANESE CERAMIC ART.—The sixth and penultimate part of the magnificent publication, *Keramic Art of Japan*, has been completed by Messrs. Sotheran & Co., London. It contains the end of the previously-begun essay on Japanese art; pages of the introductory essay on the same subject; on the Tse section and the Caga section, with chromo-lithographic and other plates, and descriptions of the illustrations. The plates are exquisite specimens, especially admirable among which are plate xxxv., vases of modern Kioto ware, and plate xx., two koros of Satsuma work.

THE DENVER AND RIO GRANDE RAILROAD LEASE.—CHICAGO, October 22.—The following particulars have become known here concerning the lease of the Denver and Rio Grande Railroad by the Atchison, Topeka, and Santa Fé Company for 30 years. The lease will take effect on December 1st. The Denver and Rio Grande Company will receive 43 per cent of the gross earnings, decreasing 1 per cent yearly, and will receive 37 per cent from the seventh to the fourteenth year. The San Juan silver mines will be opened through the Grand Cañon of Arkansas, and the ultimate design is to connect with the Kansas Pacific. It is supposed that this transaction will result in a warm competition with the Union Pacific for freight traffic.

ELECTRIC LIGHTS AT SEA.—An exchange has the following: "The utility of the electric lights for ocean steamers was forcibly illustrated during the last voyage of the Faraday from New York. It would seem that during a thick fog near the Banks of Newfoundland, at ten o'clock at night, she suddenly discovered a large emigrant sailing-ship immediately under her bow. The brilliancy of Dr. Siemens's electric light revealed the danger just in time to enable the captain to reverse the engines, and the two ships passed each other at a distance of a few feet. The screams of the women and children, who had hurriedly collected on deck, indicated the hopelessness of the situation in so far as they were concerned; and it is morally certain that the lanterns ordinarily used by transatlantic steamships would have failed to penetrate the fog sufficiently to have made it possible to avoid a collision, and more than a hundred lives might have been lost."

HEAVY FAILURE IN THE BOSTON COAL TRADE.—The Boston *Herald* says:

"Austin C. Wellington, coal-dealer, Boston, has failed. Mr. Wellington is somewhat involved in the affairs of Charles P. Stickney, in regard to whose transactions the public are familiar. According to the statement which he makes to his creditors, his liabilities are $174,000 and his assets nominally $57,000. The Philadelphia and Reading Coal and Iron Company, of whom Mr. Wellington bought the most of his coal, is said to be a creditor to the amount of about $85,000. Mr. Wellington's assets, as found by the committee of investigation, consist of some $25,000 in coal, $30,000 in bills receivable, and $12,000 or $14,000 in coal sheds on the wharves. All the property on the wharves has been attached by the Philadelphia and Reading Coal and Iron Company for the general benefit of all the creditors."

GAS-WELLS.—An East Liverpool (Ohio) correspondent of the Cleveland *Leader* says of the natural gas-wells of the former city: "They form one of the seven wonders of the world. They are situated in and around the city, and give it a continual supply of the finest light. The gas is almost as free as the air. It costs practically nothing, and forms the illuminator and heater of the town. The city is lighted by it, and the street lamps blaze away at noonday as well as at midnight. It costs nothing to let them burn, and it takes trouble to put them out. Its light is not the flickering mockery of poorly-manufactured gas, but a flame which approximates in its brilliancy that of the electric light. Almost the entire fuel used in the town is this gas. It is conducted into the grates and stoves in pipes, and by it all the cooking and heating are done." It is also used in furnishing steam power for many of the largest pottery and ironstone china manufacturing establishments, twenty-two of which are in operation and busily engaged, employing over 2000 hands, and which it is considered justly entitles East Liverpool to be designated "the Ceramic City" of America. Regarding the duration of the supply from these wells, it is stated that "the first well discovered now burns as brightly as when it was first opened, and for the last twenty years has never flagged in its brilliancy, and none of those now in operation have ever shown any signs of giving out. For years

Liverpool used manufactured gas, never dreaming of the rich supply that was wasting away daily under its very feet." The poor quality of the manufactured product induced the opening of the first well in 1859. This well, which is 450 feet deep, "has been furnishing fuel and light to several houses, producing the steam for a large engine and burning pottery kilns every day for nearly twenty years."

THEORIES OF WORLD-MAKING.—According to the crude opinions prevailing during the infancy of modern science, matter and motion were all required for calling a world into existence; but it was soon found that, unless, in the beginning, the materials which formed the solar system moved with a certain order and regularity, they could never have risen from the chaotic to the cosmical condition. As all the planets move around the sun in the same direction, Laplace was led to believe that in remote times all must have been connected together; and such a primitive connection might be afforded if the sun and his attendants were originally a vast fire-mist, their matter being so much attenuated by heat that it extended far beyond the boundaries of the solar domain. He supposed that such an immense rarefied mass, on being set in motion by some cause which he does not specify, would ultimately be compelled by its own friction and by gravity to rotate with a uniform angular velocity in all its parts and around a common center. In accordance with the principles of physical astronomy, he concluded that this rotation would become rapid as the immense solar nebula cooled and contracted, until at last the centrifugal force became great enough to overpower gravity and to throw off matter from the equator of the whirling mass. Laplace considered that, under the most probable circumstances, the nebulous matter thus thrown off or abandoned by the shrinking spheroid would all collect together to form a planet; but that, in some unusual cases, it would assume the expanded figure of a vast solar ring; and that, under certain conditions, it might break up into a number of asteroids. The singular group of bodies revolving between Mars and Jupiter is supposed to have come into existence in consequence of some rare accident, which made the great solar ring a prey to many centers of aggregation, instead of allowing it to coalesce around a single one. In all other cases, the cooling and contraction are said to have been successful in giving birth to a great planet, whenever the centrifugal force became sufficient to separate the equatorial portions of the rotating solar nebula. According to the views of Laplace, Neptune must be regarded as the first-born world of those already known; while Uranus is next in age, and the other planets were launched into being in a succession depending on their distances from the sun; so that Mercury is the youngest member of the solar family. —*Prof. Daniel Vaughan, in Popular Science Monthly for September.*

## GENERAL MINING NEWS.

### MONTANA.

#### THE PENOBSCOT AND SNOW DRIFT MINE.

The Portage Lake *Mining Gazette* says: "On the 4th of next month a stockholders' meeting of this company will be held on the mine, near Belmont, Montana, for the purpose of electing new trustees, who will probably fix the date of the first dividend. Only ten heads of stamps are running, and it is estimated that the yield of gold this month will be in the neighborhood of $30,000, at an expense of about $3000. The company will have ten additional heads of stamps in operation by the middle of November. After the gathering on the 4th of next month, all stockholders' meetings will be held at New York."

### NEVADA.

#### THE COMSTOCK.

From the mining summary in the *Gold Hill News* of the 16th inst. we extract the following: "Work is progressing just the same at every point of interest in all the mines, and in the Sierra Nevada, where the attention of mining capitalists has been centered for the past few weeks, the prospects for the opening up of a rich body of ore are of the best character. The bear stories that the cross-cut on the 2100 level had struck porphyry, and that the ore was poor at the 2200 station, have no foundation whatever, while in the other prospecting mines throughout the extent of the great lode the prospects have not been brighter for years past.

"Night before last, a stream of hot water was encountered in the east drift from the north drift on the 1600 level of the Union Consolidated. This water created a hot vapor that very materially interferes with the progress of work in that and the Mexican mines. The water has, however, been caught up and is now carried in close boxes to the tanks of the Ophir, and is then taken to the surface by the pumps of that mine, so that no serious delay in the developments of either mine is likely to occur.

"At the Ophir a diamond drill run ahead of the face of the east drift on the 2100 level also struck a strong stream of hot water. The hole was immediately plugged up so as to keep the water in check until the pumps at the 2100 level station were ready to take it, which will be in a day or two more. The north drift on that level, running to connect with the North Consolidated Virginia shaft, is being pushed ahead with six-hour shifts of men. This is, at the present time, one of the most important pieces of prospecting work on the Comstock, as it must penetrate several hundred feet of entirely new and unprospected ground, immediately adjoining the Ophir discoveries, and lying between that and the new ore discoveries in the Sierra Nevada.

"At the Savage and the Hale and Norcross the 2100 levels have been once more drained, and if nothing further happens to prevent, we may soon look forward to some interesting developments on the lower levels of those mines.

"The Alta is erecting new and extensive ore-dumps, preparatory to the extraction of ore.

"The Belcher and Crown Point are pushing the cross-cutting on the 2360 level, and are now beginning the opening up of the 2460 level. All along the line the developments are being pushed vigorously, with many excellent prospects.

"The north drift on the 1600 level of the Chollar Combination shaft will connect with the Sutro tunnel in a day or two more. The putting in of the pumps and water tanks below the 1600 station is making the best of headway.

"The main south branch of the Sutro tunnel, toward the Julia shaft, is pushing ahead at a lively rate in regular Comstock vein matter. It is now in 345 feet from the main tunnel, consequently has 1055 feet yet to run to reach the Julia shaft. This will take four or five months, unless assisted by drifting from the Julia shaft. The drift from the Chollar Combination shaft to connect with the tunnel is very nearly completed, and the connection is liable to be made at almost any time. Meanwhile the sub-drain or canal beneath the sill floor of the main tunnel is being enlarged throughout, ready for the reception of the water from the various mines.

"The Lady Bryan hoisting works were totally destroyed by fire on the 13th inst., with a loss estimated at $200,000."

### UTAH.

#### FIRE AT THE ONTARIO MINE.

The following telegrams have been received from the Superintendent of the Ontario Silver Mining Company, Salt Lake, at the Company's office here:

"SALT LAKE CITY, October 19, 1878.

"At 1 A.M., on the 19th inst., the fire caught in the oil-room at the mine, close to the fire-pump, rendering the latter useless (the cause is unknown), burning the oil-hoisting works, lagging, timber supplies, etc. All wood, new hoisting works, and saw-mill safe. Pumps, boilers, and steam conductors but little damaged. No danger from water. Loss about $100,000. R. C. CHAMBERS, Superintendent."

"SALT LAKE CITY, October 20, 1878.

"Can use new shaft. Mill will start in five days.

"R. C. CHAMBERS, Superintendent."

The following has been received from the President of the Company:

"SAN FRANCISCO, October 21, 1878.

"Pumps are all right. Plenty of ore. No cessation of dividends."

The mill report of the Superintendent of the Company received at the New York office, on the 23d inst., gives: Product for the week ending 14th inst., 32 bars, $31,872.75. Number tons of ore on hand, 2098. The work on the new chloridizing furnace is being pushed rapidly. The new shaft has been sunk 30 feet since last report, making present depth 478.

## NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending September 3d:

| *No. of Patent.* | *Title of Invention.* | *Name of Inventor* | *Residence.* |
|---|---|---|---|
| 207,590 | Steam-Pump | John A. Burnap | Albany, N. Y. |
| 207,592 | Pump | Howard Cadwalader | Richmond, Ind. |
| 207,606 | Sheet-Metal Pipe | George W. Ketcham | Newark, N. J. |
| 207,608 | Automatic Governor and Cut-off for Engines | Dennis O'B. Ladd | Chicago, Ill. |
| 207,619 | Machine for Shearing, Punching, and Stamping Metals | Henry O'Neill (a). | New York, N. Y. |
| 207,622 | Ore Separator | Paschal Plant | Washington, D. C. |
| 207,639 | Reciprocating Engine | Edward Baines | Ontario, Canada. |
| 207,661 | Hoisting Jack. | Richard O'Keeffe | Omaha, Neb. |
| 207,662 | Steam-Boilers | Wm. M. Kilgore | Uniontown, O. |
| 207,669 | Puddling Furnaces | Wm. L. McNair | Alleghany, Pa. |
| 207,678 | Torpedo for Oil-Well | Horatio L. Porter | Elk City, Pa. |
| 207,681 | Hoisting Apparatus | Oliver S. Presbrey | Port Henry, N. Y. |
| 207,695 | Separating Metals from Waste Solutions | John Tunbridge | Newark, N. J. |
| 207,700 | Pump | John S. Adams | Elgin, Ill. |
| 207,723 | Duplex Telegraph | Thos. A. Edison (b). | Newark, N. J. |
| 207,724 | " " " | " " | " " |
| 207,732 | Steam-Generating and Heating Device for Boilers | Ed. G. Good (c). | Chicago, Ill. |
| 207,754 | Electrode for Electric Lights | Orazio Lugo | Flushing, N. Y. |
| 207,755 | Kiln for Baking Lime, Plaster, etc. | Paul F. Mabille. | Paris, France. |
| 207,771 | Sectional Steam-Boiler | Wm. H. Page | Norwich, Conn. |
| 207,779 | Feed-Water Heater and Circulator for Steam Boilers | James C. Stead | Green Point, N. Y. |
| 207,780 | Feed-Water Heater and Circulator for Steam Boilers | " " | " " " |
| 207,784 | Pump-Valve. | James Watson | Greenwich, Eng. |

RE-ISSUE.

| | | | |
|---|---|---|---|
| 8,402 | Gas Apparatus | John Hanlon (d) | New York, N. Y. |

(a) Assignor of ½ his right to Nettie Herzberg, same place.
(b) " " ½ " " George B. Prescott, New York, N. Y.
(c) " to Chas. C. Holton, same place.
(d) " by mesne assignments to National Petroleum Gas Co.

## PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, with the full name and address of parties soliciting the same:

| | |
|---|---|
| Dredging a Slip on the Jersey Shore, measuring about 10,000 cubic yards; P. O. Drawer 6085, New York City | |
| Horse and Mule Shoes and Horseshoe Nails; L. C. Easton, Col. and Ass't Quartermaster Army B'ld, New York | Oct. 28 |
| Enlarging Grammar School No. 51, on West Forty-fourth street; Board of Trustees Twenty-second Ward; Board of Education, N. Y. City | " 28 |
| Naval Supplies—White Ash, Hardware, Belting and Packing, and Sheet Rubber; A. H. Gilman, Pay Inspector U. S. Navy, 29 Broadway, City | " 28 |
| Stores and Chandlery to Public Ice-Boats for year 1879; C. A. Griscom, 115 Walnut st., Philadelphia | " 29 |
| Coal, 6000 tons Clearfield; C. A. Griscom, 115 Walnut st., Philadelphia | " 29 |
| One Direct-Acting Steam Pump, 4000 feet lineal of 4-inch light Cast-iron Pipe, Hub and Spigot Joints, Hydrants and Special Fittings for Pipes and Hydrants, Trenching, Laying Pipe, Excavating and Brick Work for Cistern; John C. Morris, 41 West Fourth street, Cincinnati, O | " 29 |
| Furnaces in new School House, Lombard street, Philadelphia; H. W. Halliwell, 713 Filbert street, Philadelphia | " 30 |
| Dredging Rappahannock and Chickahominy Rivers, Virginia; S. T. Abert, U. S. C.E., Washington, D. C. | " 30 |
| Coal—300 tons Lackawanna, steamboat size; A. H. Gilman, Pay Inspector U. S. Navy, 29 Broadway | " 30 |
| Boring Artesian Wells; Committee Artesian Wells and Water Works, Charleston, S. C. | Nov. 1 |
| One Pavilion at Bellevue Hospital, Department of Public Charities and Correction, 66 Third avenue, New York | " 2 |
| Wrought and Cast-iron Work required for protecting the United States Treasury, N. Y.; Thomas R. Jackson, Supt. of Repairs, United States Court House and Post Office, New York City | " 4 |
| Grading, Flagging, etc., of Gest st., Cincinnati; John E. Bell, Pres't Board of Public Works, Cincinnati, O | " 4 |
| Grading, Macadamizing, and Constructing Drains, Tremont st., Cincinnati; John E. Bell, Cincinnati | " 4 |
| Grading, Macadamizing and Constructing Drains, Considine ave., Cincinnati; John E. Bell, Cincinnati | " 4 |
| The same to Charles st., Cincinnati; John E. Bell, Cincinnati. | " 4 |
| Grading, Curbing, Constructing Culverts, etc., Third avenue, Cincinnati; John E. Bell, Cincinnati | " 4 |
| Weather-Boarding Bridge, Port Clinton, also for Slating the same; John P. Powers, Com., Pottsville, Pa | " 4 |
| Erection of new School House on Seventh street, Board of School Trustees Eleventh Ward; Board of Education, New York City | " 5 |
| Putting in repair Eighth street Bridge Abutments ready for Iron Superstructure; John E. Bell, Cincinnati, O | " 7 |
| Plans for Architects for Building a Jail in Covington, Ky; George H. Davidson, City Clerk, Covington, Ky | " 8 |
| 50,000 Cross-ties for Denver and Rio Grande R. R.; R. F. Weitbrec, Treas. D. and Rio G. R. R., Colorado Springs, Col | During the Winter |
| Railway Construction and Working, 2000 miles; F. Braun, Sec'y Dept. of Public Works, Ottawa, Canada | Dec. 1 |
| Railway Construction, 310 Miles; F. Braun, Secretary of Department of Public Works, Ottawa, Canada | Jan. 1, 1879 |
| Gas Illumination of Rio de Janeiro, Brazil; Salvador de Mendonca, Brazilian Consul-General, 42 B'way, New York | March, 1879 |
| Locks and Keys for Mail Bags; D. M. Key, Postmaster General, Washington, D. C. | March 20, " |
| Coal for Schools of Youngstown Board of Education, Youngstown, O | March 29, 1879 |

COAL CONTRACT AWARD.—The contract for coal required (300 tons) for the Schuylkill County Prison was awarded to Leonard Scheibelhut at the following prices per ton: Stove, $2.30; Broken, $2.30; Chestnut, $1.65.

## STATISTICS OF COAL PRODUCTION.

*This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.*

Comparative statement for the week ending Oct. 19th, and years from January 1st:

| Tons of 2240 lbs. | 1878. Week. | 1878. Year. | 1877. Week. | 1877. Year. |
|---|---|---|---|---|
| *Wyoming Region.* | | | | |
| D. & H. Canal Co.. | 41,184 | 1,628,485 | 12,922 | 1,297,408 |
| D. L. & W. RR. Co. | 50,254 | 1,630,718 | 34,438 | 1,367,445 |
| Penn. Coal Co..... | 19,618 | 684,549 | 30,030 | 773,133 |
| L. V. RR. Co..... | 23,744 | 627,080 | 26,320 | 673,864 |
| P. & N. Y. RR. Co.. | 797 | 25,170 | 505 | 33,436 |
| C. RR. of N. J..... | 20,728 | 748,354 | 39,215 | 973,204 |
| Penn. Canal Co.... | 12,115 | 283,139 | 16,055 | 267,871 |
| | 168,440 | 5,627,495 | 159,485 | 5,386,421 |
| *Lehigh Region.* | | | | |
| L. V. RR. Co..... | 55,174 | 1,863,085 | 98,492 | 2,666,285 |
| C. RR. of N. J..... | 38,000 | 1,030,416 | 30,327 | 1,180,120 |
| D. H. & W. B. RR.. | 1,458 | 25,462 | 1,662 | 22,674 |
| | 94,632 | 2,918,963 | 130,481 | 3,869,079 |
| *Schuylkill Region.* | | | | |
| P. & R. RR. Co.... | 2,372 | 3,766,528 | 162,796 | 5,422,186 |
| Shamokin & Lykens Val.... | 25,413 | 590,575 | 10,167 | 575,840 |
| | 27,785 | 4,357,103 | 172,963 | 5,997,026 |
| *Sullivan Region.* | | | | |
| Sul. & Erie RR. Co. | 978 | 26,724 | 763 | 15,481 |
| Total ..... | 291,835 | 12,930,285 | 463,692 | 15,268,007 |
| Increase..... | ..... | ..... | ..... | ..... |
| Decrease ..... | 171,857 | 2,337,722 | ..... | ..... |

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

*Coals Cleared on the Canals of the State of New York* for the week ending Oct. 21st, and year from the opening of navigation:

| Tons of 2000 lbs. | 1878. Week. | 1878. Year. | 1877. Week. | 1877. Year. |
|---|---|---|---|---|
| Anthracite ..... | 17,755 | 468,794 | 31,532 | 772,270 |
| Bituminous..... | 6,581 | 143,705 | 7,506 | 222,960 |
| Total amount cleared | 24,336 | 612,499 | 39,038 | 995,230 |

*The increase of shipments of Cumberland Coal* over the Cumberland Branch, and Cumberland and Pennsylvania railroads amounts to 54,692 tons, as compared with the corresponding period in 1877.

The amount of coal shipped from Coal Creek, Col., for the week ending October 14th, 1878, was 1869 tons.

*The Exports of Coal from Baltimore* for the week ending Oct. 19th were —— tons, and since January 1, 27,873 tons, as against 24,308 tons for the corresponding time in 1877.

**The Production of Bituminous Coal** for the week ending Oct. 19th was as follows:

Tons of 2000 lbs., unless otherwise designated.

| | Week. Tons. | Year. Tons. |
|---|---|---|
| *Cumberland Region, Md.* | | |
| Tons of 2,240 lb..... | 42,273 | 1,292,255 |
| *Barclay Region, Pa.* | | |
| Barclay R. R., tons of 2,240 lbs..... | 6,054 | 243,505 |
| *Broad Top Region, Pa.* | | |
| Huntingdon and Broad Top R. R..... | 3,318 | 119,317 |
| *East Broad Top..... | 1,380 | 47,724 |
| *Clearfield Region, Pa.* | | |
| *Snow Shoe..... | 415 | 18,447 |
| *Tyrone and Clearfield..... | 31,566 | 1,005,146 |
| *Allegheny Region, Pa.* | | |
| *Pennsylvania R. R ..... | 4,427 | 160,464 |
| *Pittsburg Region, Pa.* | | |
| *West Penn R. R..... | 3,562 | 144,496 |
| *Southwest Penn. R. R..... | 723 | 20,575 |
| *Penn & Westmoreland gas coal, Pa. R. R..... | 13,458 | 525,300 |
| *Pennsylvania R. R..... | 12,701 | 333,421 |

*For the week ending Oct. 14th.

**The Production of Coke** for the week ending Oct. 14th:

| Tons of 2000 lbs. | Week. | Year. |
|---|---|---|
| West Penn R. R..... | 1,251 | 67,271 |
| Southwest Penn. R. R..... | 16,070 | 606,688 |
| Penn. & Westmoreland Region, Pa. R. R. | 2,033 | 60,833 |
| Pittsburg, Penn. R. R..... | 2,240 | 88,992 |
| Penn. R R. (Allegheny Region)..... | .... | 12 |
| Total..... | 21,594 | 823,796 |

## COAL TRADE REVIEW.

NEW YORK, Friday Evening, Oct. 25, 1878.

### Anthracite.

As compared with the previous portion of this year, there is a very good business doing, and prices are as well or better maintained than at any time since the formation of the combination. The time has come when many buyers must put in their stocks to take advantage of open navigation; and with a tendency to cooler weather, consumers are beginning to lay in supplies and light their fires. The prospects are, that for several weeks business will continue good and prices be maintained; but there are whisperings of an increased allotment next month, which will tend to weaken them. Although the business doing at the present time compares very favorably with the early portion of the year, yet it is smaller than during the same month for five years past.

The prospects of forming a combination for 1879 are not in the least encouraging. The Lehigh operators have not had a meeting, nor is there any indication that they will. It is said that the Lehigh Valley Railroad Company demands 25 per cent of next year's production, and that, in the absence of the other companies showing any disposition to grant the increase, it is discouraging its operators from joining any movement toward combination. It is also said that the Philadelphia and Reading Railroad Company is asking for an increase. This is not surprising when an examination is made of the statement of receipts by this company during 1877 and 1878, from January 1st to September 30th. In the former year the receipts were $19,201,390, and in the latter $16,296,900, showing a falling off of nearly $3,000,000. The expenses are not given, but the net results are probably a repetition of Mr. Gowen's former strong argument against a combination that does not give the company a much larger business than it has done this year.

The Delaware, Lackawanna, and Western R. R. Company will sell at public auction next Wednesday, 60,000 tons of coal.

The production of anthracite coal last week was 291,835 tons, as against 499,496 tons the previous week, and 463,692 tons the corresponding week of 1877. The total production from January 1st to October 19th was 12,930,285 tons, as compared with 15,268,007 tons for the like period of last year, showing a falling off this year of 2,337,722 tons.

### Bituminous.

Prices are very low. There seems to be an unnecessary competition among the producers of this class of coal. If all were to go to work earnestly to procure new customers, instead of offering their coal to the established trade at bare cost, and often for even less, it would enable the companies to record a larger tonnage for the year, and at the same time to show better balance sheets. Vessels are in moderate supply at Georgetown, while at Baltimore they are scarce. The tendency at these ports and also Philadelphia is to advanced rates, to some ports at least.

### New York.

***Wholesale Prices of Anthracite Coal for October Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.***

| | Lump. | Steamer. | Grate. | Egg. | Stove. | Chestnut. |
|---|---|---|---|---|---|---|
| WYOMING COAL. | $ | $ | $ | $ | $ | $ |
| Lackawana, at Weehawken | 3 60 | 3 60 | 3 65 | 3 80 | 4 20 | 3 65 |
| *Pittston, at Newburg..... | 3 55 | 3 55 | 3 65 | 3 75 | 4 05 | 3 50 |
| L. Val. Coal Co., at Amboy..... | | 3 75 | 3 50 | 3 60 | 4 10 | 3 50 |
| Kingston at Hoboken..... | 3 50 | 3 60 | 3 70 | 3 85 | 4 20 | 3 60 |
| Wilkes-Barre at Pt. Johnson | 3 60 | 3 60 | 3 70 | 3 85 | 4 20 | 3 60 |
| Plymouth Red Ash at Port Johnson..... | | | 3 70 | 3 85 | 4 30 | 3 60 |
| Swoyers at Eliz. Pt. or S.A.... | 3 75 | 3 75 | 3 60 | 3 75 | 4 20 | 3 60 |
| LEHIGH COAL. | | | | | | |
| L. V. Coal Co., at P. Amboy. | 4 10 | .. | 3 90 | 3 90 | 4 10 | 3 50 |
| Cross Creek, at Port John. | 4 00 | 3 90 | 3 90 | 3 90 | 4 20 | 3 60 |
| Buck Mount. Vein at Elizabeth Port or S. A..... | 4 25 | 4 00 | 3 90 | 3 90 | 4 20 | 3 60 |
| SCHUYLKILL COAL | | | | | | |
| *At Pt. Richmond, Phila.* | | | | | | |
| Hard White Ash. ..... | 3 50 | 3 50 | 3 50 | 3 55 | 3 95 | 3 40 |
| Free-burning W. Ash. ..., | ..... | ..... | 3 40 | 3 50 | 3 95 | 3 30 |
| Schuylkill Red Ash..... | ..... | ..... | ..... | 3 75 | 4 00 | 3 30 |
| Lorberry..... | ..... | ..... | 3 80 | 3 95 | 4 00 | 3 40 |
| Lykens Valley Vein..... | ..... | ..... | 3 80 | 3 95 | 4 00 | 3 60 |
| †*Alongside in N.Y. Harbor.* | | | | | | |
| Hard White Ash ..... | 4 20 | 4 20 | 4 20 | 4 20 | 4 40 | 3 80 |
| Free-burning W. Ash..... | ..... | ..... | 3 90 | 4 05 | 4 40 | 3 80 |
| Schuylkill Red Ash..... | ..... | ..... | ..... | 4 35 | 4 50 | 3 90 |
| Lorberry..... | ..... | ..... | ..... | 4 60 | 4 60 | 4 25 |
| Lykens Valley Vein..... | ..... | ..... | 4 60 | 4 70 | 4 70 | 4 35 |

* Fifty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburgh, the current date of harbor freight will be allowed from the prices here given.

***Wholesale Prices of Bituminous Coal.***

DOMESTIC GAS COALS.

| Per ton of 2240 lb. | At the Shipping Ports. | Alongside in New York. |
|---|---|---|
| Westmoreland and Penn..... | $4.25 | ..... |
| At Greenwich, Philadelphia .... | ..... | $5.50 |
| At S. Amboy..... | 5.00 | 5.50 |
| Kanawha at Richmond ..... | 4.10 | 5.40 |
| Red Bank Cannel, Pa., at Philadelphia.. | 8.00 | 8.50 |
| Youghiogheny, Waverly Co., at Balt ... | 4.00 | 5.65 |
| Despard, West Va..... | 4.50 | 6 00 |
| Murphy Run, West Va., at Baltimore.. | 3.75 | 5.85 |
| Fairmount, West Va., " " ... | 3 75 | 5.70 |
| Newburg Orrel. Md. " " ... | 3.75 | 6.00 |
| Cannelton Cannel, West Va ..... | ..... | 10.00 |
| " Splint " at Richmond. | 6.00 | 7.00 |
| " Gas Coal at Richmond ..... | 4.00 | 5.65 |
| Peytona Cannel, W. Va., at Richmond... | ..... | 10.00 |

MANUFACTURING AND STEAM COALS.

| | | |
|---|---|---|
| Cumberland at Georgetown and Alexandria ..... | 2.75@2.90 | 4.35@4.50 |
| Cumberland, at Baltimore..... | 2.90@3.00 | 4.35@4.50 |
| Cl'rfi'd "Eureka" and "Franklin." | | |
| At mines..... | 0.75 .... | .... |
| At Baltimore..... | 3.25 .... | 4.50 |
| At Philadelphia..... | 3.25 .... | 4.50 |

FOREIGN GAS COALS.

| | Sterling. | Am. cur'ncy |
|---|---|---|
| Newcastle, at Newcastle-on Tyne..... | 7s.6d. | $2 50@ $3.50 |
| Liv. House Orrel, at Liv..... | 25s. | 13.00 |
| Ince Hall Cannel " ...., | 35s.6d. | 18.00 |
| " Gas Cannel " ..... | 25s.6d. | 10 00@ 10.50 |
| Scotch Gas Cannel, at Glasgow, nominal..... | 25s. | 7.50 |
| | Gold. | |
| Bl'k House, at Cow Bay, N.S. | $1.75 | $4.50 |
| Caledonia, at Pt. Caledonia. | 1.50 | 4.25 |
| Glace Bay at Glace Bay.... | 1.50 | 4.00 |
| Lingan, at Lingan Bay..... | 1.50 | .... |
| Intern'l Mines, at Sydney... | 1.75 | 4.50 |
| Pictou, Vale Mines, at Pictou | 2.00 | 4.70 |

***Retail Prices.***

Per ton of 2000 lbs.

*Anthracite.*

| | G. & Egg. | Stove. | Chest. |
|---|---|---|---|
| Pittston coal delivered..... | $5.00 | $5.00 | $5.00 |
| Lack. coal, delivered below 59th St. | 4.50 | 4.75 | 4.50 |

*Bituminous.*

| | | | |
|---|---|---|---|
| Liv. House Orrel..... | $18.00 | American Orrel..... | $11.00 |
| Liv. House Cannel... | 18.00 | Red Bank Cannel. .... | 7.00 |
| Am. " .... | 11.00 | Cumberland... .. | 9.00 |
| Ca'n'lt'n Bl'k, or splint. | 10.00 | | |

**Baltimore.** Oct. 22, 1878.

[Specially reported.]

*Wholesale Prices per ton of 2240 lbs.*

*In cars at Depot N. C. R. R.*

HARD WHITE ASH, FREE-BURNING WHITE ASH, SHAMOKIN, ETC.

| | | | |
|---|---|---|---|
| Lump and Steamboat.. | $3.85 | Stove.... .. ..... | $4.35 |
| Broken..... | 4.00 | Chestnut . ... ..... | 3.85 |
| Egg ... ..... | 4.10 | | |

LYKENS VALLEY RED ASH.

| | | | |
|---|---|---|---|
| Broken..... | $4.15 | Stove..... | $4.45 |
| Egg..... | 4.30 | Chestnut..... | 3.90 |

**Buffalo.** Oct. 22, 1878.

[Specially reported by C. M. UNDERHILL.]

| | Delivered at Elmira. Afloat. | Ithaca. Afloat. | Syracuse Afloat. | Rochester. Afloat. | Oswego F. O. B |
|---|---|---|---|---|---|
| Lump.. | ..... | ..... | ..... | ..... | ..... |
| Grate... | $3.75 | $3.60 | $3.60 | $3.85 | $4.05 |
| Egg..... | 3.85 | 3.70 | 3.70 | 3.95 | 4.15 |
| Stove... | 3.95 | 3.95 | 3.95 | 4.20 | 4.40 |
| Nut..... | 3.85 | 3.85 | 3.60 | 3.85 | 3.90 |

| | Delivered at Sodus Point. F.O.B. | Charlotte. F.O.B. | Erie. F. O. B. | Buffalo. Afloat. | Buffalo. F. O. B. | Buffalo. Ret.Del. |
|---|---|---|---|---|---|---|
| Lump.. | ..... | ..... | ..... | ..... | ..... | ..... |
| Grate... | $4.05 | $4.05 | $4.55 | $4.15 | $4.55 | $5.15 |
| Egg..... | 4.15 | 4.15 | 4.65 | 4.25 | 4.65 | 5.25 |
| Stove . | 4.40 | 4.40 | 4.90 | 4.50 | 4.90 | 5.50 |
| Nut..... | 3.90 | 3.90 | 4.40 | 4.00 | 4.40 | 5.00 |

[Specially reported by LEE & LOOMIS.]

*Per ton of 2000 lbs. delivered on cars.*

| | Lump. | Run of Mine. | Nut. | Slack. |
|---|---|---|---|---|
| Connellsville coke... | $4.75 | ..... | ..... | ..... |
| Brookfield Coal..... | 3.50 | ..... | ..... | ..... |
| Briar Hill..... | 3.50 | ..... | 2.85 | ..... |
| " " No. 2..... | ..... | 3.15 | ..... | . ..... |
| Youghiogheny..... | 4.00 | ..... | ..... | ..... |
| Monterey..... | 3.00 | 2.60 | ..... | ..... |
| Catfish..... | 3.00 | 2.60 | ..... | 1.70 |
| Stoneboro ..... | ..... | 2.60 | 2.50 | 1.70 |
| Sterling Cannel..... | 4.50 | ... .... | ..... | ..... |
| Cameron..... | .... .... | 2.80 | ..... | .... ... |
| Hillside..... | ..... | ..... | .. .... | . ..... |

Cost of coal from Erie, Oswego, Sodus Point or Charlotte for Western market, same as if shipped from Buffalo.

BLOSSBURG COAL.

*Per ton of 2000 lbs.*

| | To dealers. | To consumers. |
|---|---|---|
| By car or boat..... | $3.25 | $3.25 |
| In yard..... | 3.40 | 3.60 |
| In car..... | ..... | 3.65 |
| Delivered..... | ..... | 4.00 |

[Specially reported by E. L. HEDSTROM.]

Until further notice, the following will be the prices for Scranton, Wyoming, Lehigh, and Blossburg coals, per ton of 2000 pounds, delivered free on board vessels at Buffalo N. Y.:

| | Lump. | Grate. | Egg. | Stove. | Nut. |
|---|---|---|---|---|---|
| Scranton..... | .... | $4.55 | $4.65 | $4.90 | $4.40 |
| Wyoming..... | .... | 4.55 | 4.65 | 4.90 | 4.40 |
| Lehigh (Sugar Loaf).... | .... | .... | .... | .... | .... |

Blossburg, $3.50, F. O. B.

| | To dealers. On cars or boats. | To dealers. In yard, screened. | Retail. Delivered. |
|---|---|---|---|
| Grate..... | $4.15 | $4.25 | $5.15 |
| Egg..... | 4.25 | 4.35 | 5.25 |
| Stove..... | 4.50 | 4.60 | 5.50 |
| Chestnut..... | 4.00 | 4.10 | 5.00 |
| Lehigh Lump. ..... | .... | .... | .... |
| Blossburg..... | 3.25 | 3.40 | 4.00 |

### Chicago. Oct. 22, 1878.

[Specially reported by Messrs. Reno & Little.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

*Retail prices of coal delivered per ton of 2000 lbs*

| | | | |
|---|---|---|---|
| Lackawanna Stove | $6.25 | Erie and Brier Hill | $5.00 |
| " Chestnut | 6.00 | Wilm'gton & Ill. | $3 00@3.50 |
| " Grate | 6.00 | Blossburg | 5.50@6.0C |
| " Egg | 6.00 | Piedmont | 7.00 |

Stocks of all kinds of coal liberal. Trade dull.

### Cincinnati. Oct. 22, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

*Per bushel of 72 lbs.*

| | Retail delivered. | Wholesale afloat. |
|---|---|---|
| Youghioghney | 11c. | 7½c. |
| Camden | 9c. | 5½c |
| Cannel | 17@18c. | 13c. |

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

### Cleveland. Oct. 22, 1878.

[Specially reported by F. A. Bates, Esq.]

*Per ton of 2000 lbs. f.o.b. vessels.*

WHOLESALE.

| | |
|---|---|
| Brier Hill (Church Hill) | $3.25 |
| " " No. 2 Grades | 3 00@3.15 |
| Monday Creek | 2.60 |
| Straitsville Lower Vein | 2.60 |
| Hocking Valley | 2.60 |
| Massillon (No. 2 grades 15 cents less) | 2.60 |
| Tuscarawas Valley | 2.25 |
| Columbiana | 2.25 |
| Nut coal, various grades | 1.70@2.00 |
| Screenings " " | 1.25@1.50 |
| Youghiogheny gas coals | 3 60 |

RETAIL TRADE.

| | 1 ton. | 10 tons. |
|---|---|---|
| Brier Hill lump | $4 00 | 3 75 |
| Massillon and Mineral Ridge lump | 3 75 | 3 50 |
| " " " nut | 3 50 | 3 25 |
| Straitsville Lower Vein and Hocking lump | 3 60 | 3 35 |
| " " " " nut | 3 40 | 3 15 |
| Rich Hill lump | 3 50 | 3 35 |
| " " nut | 3 25 | 3 00 |
| Columbiana, lump | 3 00 | 2 75 |
| " nut | 2 50 | 2 35 |
| Lacka'a., Wilkes-Barre and Pittston egg and grate | 5 50 | 5 25 |
| Lackawanna, Wilkes-Barre and Pittston stove | 5 85 | 5 60 |
| " " " " chestnut | 5 25 | 5 00 |

Lehigh $1 per ton higher.

### Hamilton, Ont. Oct. 22, 1878.

[Specially reported by H. Barnard.]

*Retail prices delivered per ton of 2000 lbs.*

| | | | |
|---|---|---|---|
| Scr. or Wilkes-B. Grate | $4.75 | Lehigh Lump | $6.00 |
| " " Egg | 4.75 | Brier Hill | 5.00 |
| " " Stove | 5.25 | Massillon | 4.50 |
| " " Nut | 4.75 | Smithing | 5.50 |

From wharf or yard to the trade, 50c. per ton additional. Afloat by cargo per canal barge, 15c. per ton less than in cars at depot.

### Indianapolis. Oct. 22, 1878.

[Specially reported by Messrs. Cobb & Branham.]

WHOLESALE BITUMINOUS.

*On board cars, per ton of 2000 lbs.*

| | | | |
|---|---|---|---|
| White River | None in market | Hocking Valley | 4.20 |
| Brazil Block | $2.10 | Raymond City | 3.40 |
| Highland Grate | 1.85 | Youghiogheny | 3.70 |
| Indiana Cannel | 3.65 | Blossburg (smithing) | 5.25 |
| Peytona | 5.70 | Piedmont " | 5.25 |

*Per car, 12 tons.*

| | | | |
|---|---|---|---|
| Block coal, nut | $15.00 | Block Slack | $12.00 |
| Highland, " | 14.00 | | |

RETAIL BITUMINOUS.

*Delivered per bushel of 70 lbs.*

| | | | |
|---|---|---|---|
| Raymond City | 14c. | Block Nut, steam use | 6c. |
| Brazil Block | 10 | " Slack, " | 5 |
| Highland Grate | 9 | Virginia Cannel | 24 |
| Block Nut, domestic use | 10 | Indiana Cannel | 15 |
| Highland Nut, " " | 11 | Youghiogheny | 15 |
| " " steam | 8 | Blossburg | 24 |

GAS COKE.

*Per bushel, measure containing 2888 cubic inches.*

| | | | |
|---|---|---|---|
| Retail, crushed | 8c. | Wholesale, lump | 6½c. |
| " lump | 7 | " crushed | 7½ |

ANTHRACITE.

*Per ton of 2000 lbs.*

| *Wholesale on Cars.* | | *Retail delivered.* | |
|---|---|---|---|
| Wilkes-Barre, all sizes | $5.50 | Wilkes-Barre, all sizes | $6.50 |
| Lackawanna, " | 5.75 | Lackawanna, " | 6.50 |
| Lehigh " | 6.75 | Lehigh, " | 7.50 |

### Louisville. Oct. 22, 1878.

[Specially reported by Messrs. Byrne & Speed.]

The demand at present is very good, in the city and on railroads.

*Wholesale per bushel of 72 lbs.*

| | | | |
|---|---|---|---|
| Pittsburg | 6c. | Kentucky, in river | 5½c. |
| Raymond City | 6 | Kentucky, on cars | 6 |

*Retail.*

| | | | |
|---|---|---|---|
| Pittsburg | 10c. | City made Coke | 7c. |
| Raymond City | 9 | Gas Coke | 8c. |
| Kentucky | 8 | Cannel Coal | 17 |
| Hard and soft Coke | 8 | Anthracite, per ton | $7 00 |

### Montreal. Oct. 22, 1878.

[Specially reported by Messrs. Robert C. Adams & Co.]

*Wholesale per 2240 lbs.*

| | | | |
|---|---|---|---|
| Scotch Steam | $3.50 | Cape Breton Steam | $2.75 |
| Pictou | 3.25 | Newcastle Smith's | 4.00 |

*Anthracite at retail, per 2000 lbs. delivered.*

| | | | |
|---|---|---|---|
| Stove | $5.50 | Chestnut | $5.00 |
| Egg | 5.15 | | |

### Milwaukee. Oct. 22, 1878.

[Specially reported by Messrs. R. P. Elmore & Co.]

*Retail price per ton of 2000 lbs.*

| | |
|---|---|
| Lehigh prepared, chippings | @$7.00 |
| " " lump | @ 7.00 |
| Lackawanna prepared (all sizes) | @ 6.00 |
| Briar Hill | @ 5.00 |
| Steam cokes | $3.75@ 4.75 |

### New Orleans. Oct. 21, 1878.

[Specially reported by Messrs. C. A. Miltenberger & Co.

PITTSBURG COAL.

| | |
|---|---|
| At wholesale (by boat-load) | 27c per bbl. of 180 lbs. |
| To steamboats | 45c. " " |
| " manufactories | 45c. " " |
| " families | 50c. " " |
| In hhds. (for shipment) | $5.00 per hhd from 5 to 6 bbls. |

ANTHRACITE COAL.

*Per ton of 2000 lbs.*

| | |
|---|---|
| At wholesale | $7.00 to $8.00 |
| To families etc. | 9 00 to 10.00 |

ST. BERNARD (KY.) COAL.

| | |
|---|---|
| To steamboats | 40c. per bbl. of 180 lbs. |
| " families | 45c. " " |
| Virginia cannel to families | $1.00 " " |

### Philadelphia. Oct. 24, 1878.

The Schuylkill Region is again at work since Monday, with only a share of the cars which could be loaded. The local trade is fair and the demand at tide-water pressing for some sizes; but vessels are very scarce and freights having a strong tendency upward—$1.15 being offered to Boston. The rates are likely to reach $1.25 before many days.

It is the impression that the mines will continue to run for the balance of the month and through November, which will require a largely-increased quota for next month. If the programme whispered here by the knowing ones is carried out, prices must weaken during next month.

### Pittston, Pa. Oct. 22, 1878.

Pennsylvania Coal Company's Coal in Yard.

*Retail per ton of 2,000 lb.*

| | |
|---|---|
| Lump, Egg, and Stove | $2 25 |
| Chestnut | 2 00 |
| Pea | 1 00 |

Delivered, 50 cents per ton additional.

### Richmond. Oct. 22, 1878.

[Specially reported by S. H. Hawes, Dealer in Coal.]

*Per ton of 2240 lbs. f.o.b.*

| | | | |
|---|---|---|---|
| Kanawha Cannel | $9.00 | New River Bituminous | $3.30 |
| Coalburg Splint | 4.50 | Clover Hill Coal | 2.50 |
| Lewiston " | 4.50 | Norwood Gas and | |
| Kanawha Gas Coal | 4.10 | Steam Coal | 2.70 |

### Sandusky. Oct. 22, 1878.

[Specially reported by Messrs. Black & Clarke, Agents Con Coal and Mining Company.]

*Per ton of 2000 lbs.*

ANTHRACITE.

| | Grate. | Egg. | Stove. | Chest |
|---|---|---|---|---|
| Lehigh | $6 00 | $6 00 | $6 25 | $5 75 |
| Wilkes-Barre | 4 80 | 4 90 | 5 15 | 4 65 |
| Pittston | 4 80 | 4 90 | 5 15 | 4 65 |

BITUMINOUS.

| | | | |
|---|---|---|---|
| Massillon | $2 85 | Straitsville | $2 50 |
| Hocking Valley | 2 50 | Piedmont | 4 10 |

Prices retailed delivered 50c.@75c. above car prices.

### San Francisco. Oct. 17, 1878.

Coal.—Imports from January 1st to September 1st, 1878:

| | Tons. | | Tons. |
|---|---|---|---|
| Anthracite | 9,472 | English | 19,612 |
| Australian | 90,065 | Mt. Diablo | 65,401 |
| Coos Bay | 21,677 | Rocky Mountain | 371 |
| Cumberland | 802 | Ione | 621 |
| Bellingham Bay | 2,820 | Carbondale | 2,024 |
| Vancouver Island | 87,780 | Ounalaska | 300 |
| Seattle | 69,645 | | |

### St. Louis. Oct. 22, 1878.

Reported by James J. Sylvester, Secretary of the Anthracite Coal Association.]

*Retail prices, delivered. Ton of 2000 lbs.*

ANTHRACITE.

| | Per ton. | | Per ton. |
|---|---|---|---|
| Lackawanna | $7.50@..... | Lehigh | $8.50@..... |
| Wilkes-Barre | 7.50@..... | Connells. Coke. | 6.00@..... |
| Schuylkill | 7.50@..... | Blossburg | 7.75@..... |

Oct. 22, 1878.

[Specially reported by Messrs. Lewis P. Harvey & Co.]

BITUMINOUS.

| | | | |
|---|---|---|---|
| Big Muddy | $3.65 | Piedmont | $7.25 |
| Indiana Block | 3.25 | Pittsburg | 4.35 |
| Illinois Coals | 2.25@2.50 | Peytona | 7.50 |
| Blossburg | 7.75 | Lehigh Val. Ant. | 7.50@8.00 |

### Toledo. Oct. 22, 1878.

[Specially reported by Messrs. Gosline & Barbour.]

We quote the following as the present prices for coal, delivered on cars here, per ton of 2000 lbs.:

*Ton of 2000 lbs.*

| | Grate. | Egg. | Stove. | Chest. |
|---|---|---|---|---|
| Pittston | $5.05 | $5.15 | $5.40 | $4.90 |
| Wilkes-Barre | 5.05 | 5.15 | 5.40 | 4.90 |
| Lackawanna | 5.05 | 5.15 | 5.40 | 4.90 |
| Lehigh lump, $5.75. | | | | |

*Ton of 2000 lbs.*

| | | | |
|---|---|---|---|
| Straitsville lump | $2 60 | Massillon nut | $2 40 |
| " nut | 2 25 | Willow Bank lump | 2 85 |
| Shawnee lump | 2 60 | " nut | 2 40 |
| " nut | 2 25 | Cumberland | 5 00 |
| Hocking Valley lump | 2 60 | Blossburg | 4 60 |
| " nut | 2 25 | Morris Run | 4 93 |
| Massillon lump | 2 85 | Gas Coal | 3 .25 |

Retail prices, delivered in the city, are: Stove, $500; Grate, Egg, and Chestnut, $5.

## FREIGHTS.

### Lake Freights on Coal and Iron Ore.

*Representing the latest actual charters up to Oct. 16th.*

| From | To | Rate per ton. | From | To | Rate per ton. |
|---|---|---|---|---|---|
| Ashtabula | Chicago | 45 | Cleveland | Chicago | 40-45 |
| Bay City | Milwauk'e | 60 | " | Milwaukee | 40 |
| Buffalo | Erie | 15 | " | Ashtabl'a* | 90 |
| " | Cleveland | 20-25 | Charlotte | Milwaukee | 70 |
| " | Portage | 80 | Erie | Chicago | 40 |
| " | Saginaw | 35 | Fairhaven | " | 70 |
| " | Chicago | 25 | " | Milwaukee | 70 |
| " | Milwaukee | 25 | Marquette | Ashtabl'a* | 1.00 |
| " | Detroit | 15 | Oswego | Chicago | 70 |
| " | Alpena | 30 | " | Milwaukee | 70 |
| " | St. Clair | 65 | " | Detroit | 45 |
| Charlotte | Chicago | 70 | Sandusky | Toronto | 90 |
| Chicago | Milwaukee | 25 | Toledo | Milwaukee | 50 |
| " | Green Bay | 30-35 | " | Cleveland* | 40 |

* Iron ore

### Rates of Freight on Anthracite Coal to Tide-Water Ports.

| Schuylkill Coals. Per ton of 2,240 lb. | From *Pine Grove. | From *Tamaqua. | From *Schuylkill Haven. | From Port Clinton. |
|---|---|---|---|---|
| To *Port Richmond*, via P. & R. R. R., Main Line, for shipment | 1.95 | 1.90 | 1.75 | ..... |
| To *Harrisburg*, via Lebanon Valley Branch | 1.29 | 1.85 | 1.70 | ..... |
| To *Allentown*, via East Pennsylvania Branch | 1.59 | 1.74 | 1.59 | ..... |
| To *Lancaster*, and Points on Lancaster Branch, via R. & C. R. R. | 1.71 | 1.66 | 1.51 | ..... |
| To *Dauphin*, via Schuylkill and Susquehanna Branch | 1.09 | 1.52 | 1.37 | ..... |
| To *Slatedale Junction*, via Berks and Lehigh ranch | 1.74 | 1.69 | 1.54 | ..... |
| To *Lebanon*, via Lebanon and Tremont Branch | 98 | ..... | ..... | ..... |
| To *Philadelphia*, via Schuylkill Canal, including freight and charges for the use of cars and barges, and for tolls (exclusive of cost of loading, trimming and unloading) | ..... | ..... | 1.65 | 1.55 |
| To *New York*, via Schuylkill Canal, including freight and charges for the use of cars and barges and tolls on the Schuylkill Canal and Delaware & Raritan Canal and the towing between Fairmount and Bordentown and between New Brunswick and New York (exclusive of cost of loading, trimming and unloading) | ..... | ..... | 2 50 | 2 4 |
| From *Tamanend*† to *Catawissa*, *McAuley*, *Mainville*, *Rupert* and *Danville*, via Catawissa & Williamsport Branch Railroad | | | | 100 |
| From *Tamanend*† to *Williamsport*, *Hall's* and *Montoursville*, via Catawissa & Williamsport Branch Railroad | | | | 135 |

*For shipment via Main Road or Schuylkill Canal, one and one-half cents per ton per mile, and two cents per ton additional to Schuylkill Haven, Pine Grove, Tamaqua or Port Clinton, for Canal, as the case may be. Provided no charge shall be less that 15 cents, or greater than 45 cents per ton

† Coal sent to points on the Catawissa and Williamsport branch will be charged one and one half cents per ton per mile, and two cents per ton additional to Tamanend.

A deduction of 20 per cent will be made from the above rates upon all coal consigned for actual consumption at iron works upon the line of the railroad, any of its branches, or the Schuylkill Canal.

An additional charge of 25 cents per ton will be made on chestnut and pea coal to whatever points consigned. If the shipper signs a release of all demands arising from a deficiency of weight at the place of destination, and agrees to indemnify the company from all claims by reason thereof, such additional charge will not be made. Releases, properly prepared, will be furnished, and can be signed at the coal offices of the company, at St. Clair, Palo Alto, Schuylkill Haven, Mount Carbon, Pine Grove, and Tamaqua.

For consumption at local points in coal region, including Shamokin, Herndon, Schuylkill Haven, Pine Grove, and Tamaqua, three cents per ton per mile, and two cents per ton additional; and a charge for *car service* of fifteen cents per ton when in Philadelphia and Reading Railroad cars, provided no charge, including freight tolls and car service, shall be less than twenty-five cents per ton. If the coal is for manufacturers, the rate wi be two cents per ton per mile, and two cents per ton additional; and a charge for car service of five cents per ton when in Philadelphia and Reading Railroad cars. Provided no charge, including freight, tolls, and car service, shall be less than fifteen cents per ton.

Sent westward via Northern Central ilway (in N. C. R W. Co.'s cars), four and two tenths cents per ton per mile, to Locust Gap, Shamokin, or Herndon, provided no charge will be made less than fifteen cents per on.

One mile extra will be added for coal passing through the East Mahanoy Tunnel.

Fractions of distances and rates will always be stated in *tenths*.

No charge will be made for weighing or making returns of coal shipped, and the latter will be furnished free of charge upon application to the weighmaster; if these returns are to be sent by mail, envelopes properly stamped and addressed, must be furnished to the weighmasters.

All coal will be charged the rates (both lateral and main line) current on the day it is weighed; it will also be waybilled on the same day.

### Coastwise Freights.

*Per ton of 2240 lbs.*

Representing the latest actual charters to Oct. 24th, 1878.

| Ports. | From Philadelphia. | From Baltimore. | From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken. |
|---|---|---|---|
| Albany | | 1.60 | |
| Augusta | | 1.25 | |
| Baltimore | 40 | 35 | |
| Bangor, Me | | 1.60 | 90 |
| Barnstable | 1.20@1.31‖ | | |
| Bath, Me | | 1.40 | 90 |
| Beverly, Mass | | | 85 |
| Boston, Mass | 1.10@1.15 | 1.45@1.50 | 90§ |
| Bridgeport, Conn. | 95† | 1.25 | 60 |
| Bristol, R. I | | | 70 |
| Brooklyn | | | |
| Cambridge, Mass. | 1.25‡ | | 90 |
| Charleston | 95@90 | | 90 |
| Cambridgeport | 1.10 | | 90 |
| Charlestown | 1.10§ | | 90 |
| Chelsea | | | |
| East Cambridge. | 1.31 | | 90 |
| East Boston | | | 95 |
| Fall River | 1.05 | 1.30 | 70 |
| Galveston | 2.25 | | |
| Georgetown | 50 | | |
| Halifax | | | 1.50 |
| Hartford | 1.45@1.50 | 1.25 | |
| Hingham | 1.25 | | |
| Hoboken | | 1.15@1.20 | 35 |
| Hudson | 1.45 | 1.50 | |
| Lynn | 1.25 | | 90 |
| Medford | 1.10§ | | |
| Middletown | | | 90 |
| Nantucket, Mass. | | | 90 |
| Newbern | | | |
| New Bedford | | 1.30 | 70 |
| Newburyport | | 1.50 | 1.00 |
| New Haven | 95† | 1.25 | 60 |
| New London | 1.07† | 1.30 | 60 |
| Newport | 1.05 | | 70 |
| New York | 85@90 | 1.25 | 35 |
| Newark | | 1.30 | |
| Norfolk, Va | 50 | 45 | |
| Norwich | 1.15 | 1.40 | 65 |
| Norwalk, Conn | 95@1.00 | 1.35 | 55 |
| Pawtucket | 1.10‡ | 1.45 | 75 |
| Petersburg | 70@75 | | |
| Philadelphia | | 70 | |
| Portland | 95† | 1.40 | 90 |
| Portsmouth, N.H. | | 1.55 | 1.00 |
| Providence | 1.20 | 1.30 | 85@90 |
| Quincy Point | | | 90 |
| Richmond, Va | 60 | | |
| Rockland | | | 90 |
| Roxbury | | | 95§ |
| Saco | 1.40 | | 1.10 |
| Salem, Mass | 1.15@1.28 | 1.50 | 90 |
| Savannah | 1.00 | | |
| Staten Island | | | 20 |
| Trenton | | 1.05 | |
| Troy | | 1.60 | |
| Wareham | | 1.55@1.60 | |
| Washington | 50 | | |
| Williamsburg | 90 | | 35 |
| Wilmington | 1,00 | 70 | |

Alexandria and Georgetown to Boston, $1.45. Washington to W reham, $1.45.

And discharging and towing. † And discharging. ‡ And towing. § 3c. per bridge extra. ¶ And pilotage. ‖ Newburg to St. John, N. B., 1.10.

### Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending Oct. 24th, 1878, are given below.

| Date. | From | To | Cargo. | R'te |
|---|---|---|---|---|
| Oct. 8 | Boston | San Francisco. | Iron | * |
| " 12 | Georgetown | Aspinwall | Coal | 3.50 |
| " 12 | Philadelphia | Aspinwall | Coal | 3.25 |
| " 12 | Philadelphia | St. Thomas | Coal | 2.30† |
| " 12 | Philadelphia | Havana | Coal | 2.00 |
| " 12 | Curacoa | New York | Salt | 9 |
| " 18 | Perth Amboy | Saco, Me | Pig-iron | 1.30 |
| " 18 | New York | Weymouth | Pig-iron | 1.15 |
| " 18 | New York | Hyannis | Pig-iron | 85 |

* Railroad iron. † $10@$12. ‡45@50s.

## IRON MARKET REVIEW.

NEW YORK, Friday Evening, Oct. 25, 1878.

**American Pig.**—We note sales of 2000 tons of Thomas iron, Nos. 1 and 2 X, on private terms. Upon the whole there is but a light demand, and prices are as low as at any time. In fact, there are rumors that sales have been made during the present week at lower prices than have yet been made public. There is a general impression that financial troubles must overcome some of the furnace companies, and this is having a very depressing effect, especially as the production of iron is much larger than the consumption, and stocks are steadily increasing. We quote No. 1 foundry at $16@$17; No. 2 foundry, $15@$16; and forge $14@$15.

**Scotch Pig.**—The business in Scotch pig has been in a retail way. There have arrived during the week 200 tons which were sold previous to arrival. We quote Eglinton at $21.75; Coltness, $23@$23.50, and Glengarnock, $22.50@$23.

**Rails.**—We learn of sales of 4000 tons of steel on private terms. There is said to be a good inquiry and prospects of a large demand next year. The efforts to form a combination of steel mills appear to have failed. We quote steel rails at mills at $42@$44, and iron rails at $32@$36.

**Old Rails.**—There has been a very active demand for these during several weeks past from mills running on bars, girders, etc. The sales reported this week will aggregate about 8000 tons. The demand is still reported as brisk. We quote at $19@$20.

**Wrought Scrap.**—A sale of 300 tons, on private terms, is reported. The inquiry is small. We quote at $20@$21.

### Baltimore. Oct. 21, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

We have no change to report in the iron market. The demand continues fair and prices unchanged. We quote:

| | | | |
|---|---|---|---|
| Balt. Char. | $26.00@$28.00 | M. & White | $13.00@$14.00 |
| Va. " | 26.00@ 28.00 | C'lC.B.Blooms | 50.00@ 52.00 |
| Anth.No.1 | 19.00@ 20.00 | " " Billetts | 52.00@ 55.00 |
| " " 2 | 18.00@ 19.00 | Refi'd Blooms | 43.00@ 45.00 |
| " " 3 | 16.00@ 17.00 | | |

### Buffalo. Oct. 22, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

Prices per gross ton delivered on cars at Buffalo:

| | 4 mos. |
|---|---|
| No. 1 Foundry | $17.50 |
| No. 2 " | 16.50 |
| No. 3 Forge | 15.00 |
| B 1 | 17.00 |
| American Scotch A 1 | 19.50 |
| " " B 1 | 18.50 |
| " " No. 2 | 18.00 |
| " " No. 3 | |
| Best selected Connellsville coke, per net ton | 4.75 |

### Chattanooga. Oct. 21, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.]

| | | | |
|---|---|---|---|
| Tenn., Ala. & Ga. Charcoal, No. 1 Foundry | $16 00@$17 00 | | |
| Tenn., Ala. & Ga. Charcoal, No. 2 Foundry | 15 00@ 16 00 | | |
| Tenn., Ala. & Ga. Charcoal, Gray Forge | 13 00@ 15 00 | | |
| Tenn., Ala. & Ga. Coke, No. 1 Foundry | 18 00@ 19 00 | | |
| Tenn., Ala. & Ga. Coke, No. 2 Foundry | 16 00@ 17 00 | | |
| Tenn., Ala. & Ga. Coke, Gray Forge | 14 00@ 15 00 | | |
| Charcoal or Coke, white and mottled | 13 00@ | | |
| Old rails | $18 00@$19 00 | Wr'ght scrap, No. 2 | $11 00 |
| Old car wh'ls. | 16 00@ 17 00 | Cast scrap | 10 00 |
| Wr'ght scrap, No. 1 | 16 00 | Muck bar | 30 00@ 32 00 |

IRON ORES.

| | |
|---|---|
| Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron | $1.25 |
| Brown hematite about 55 per cent metallic iron | 1.75 |

### Cincinnati. Oct. 22, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market:

CHARCOAL.

| | | | |
|---|---|---|---|
| H'n'g Rock | No. 1 Foundry & B 1 | $21 00@$22 50 | —4 mos |
| " | No. 2 " | 20 00@ 21 00 | —4 mos |
| " | Soft Silver Gray | 19 00@ 20 00 | —4 mos |
| " | Mill | 18 00@ 19 00 | —4 mos |
| Tennessee | No. 1 Foundry | 21 00@ | —4 mos |
| " | No. 2 " | 20 00@ | —4 mos |
| " | Mill | 18 00@ 19 00 | —4 mos |

STONE COAL.

| | | |
|---|---|---|
| Ohio | No. 1 Foundry | $17 00@ —4 mos |
| " | No. 2 " | 16 00@ —4 mos |
| " | No. 3 " | 15 00@ —4 mos |
| " | No. 4 " | 14 00@ —4 mos |
| " | Mill | 16 00@ —4 mos |

COKE.

| | | |
|---|---|---|
| Ohio & W. Va. | No. 1 Foundry | 19 00@ —4 mos |
| " " | No. 2 " | 18 00@ —4 mos |
| " " | Stove | 17 00@ —4 mos |
| " " | Mill | 17 00@ —4 mos |

CAR-WHEEL.

| | | |
|---|---|---|
| H'n'g R., C. B | Hecla, Vesuvius, Etna, Buckhorn, Jefferson. | $30 00@ 35 00—4 mos. |
| Maryland, | Cedar Point | 35 00@ —4 mos |
| Missouri, | Maramec | 28 00@ —4 mos |

BLOOMS.

| | |
|---|---|
| Charcoal | $45 00@$50 00- cash. |

SCRAP IRON.

| | |
|---|---|
| Cast | 40c. @ 45c.—cash |
| Wrought | 62½c.@ $1.00—cash |

### Cleveland. Oct. 22, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

| | | |
|---|---|---|
| No. 1 Red Specular | $6.00 per ton cash. | |
| No. 2 " " | 5.00 | " " |
| Red Hematite | 4.25 | " " |
| Lake Champlain ore | 5.25 | " " |

FOUNDRY IRON.

| | | | |
|---|---|---|---|
| No. 1 L. S. Charcoal | $22 00 | Am. S., No. 1, Ch. Val | $20 00 |
| No. 2 " " | 21 00 | " " B—1, " " | 18 00 |
| No. 1 Anthracite | 20 00 | " " No. 2 " " | 18 00 |
| No. 2 " | 19 00 | No. 1, Massillon | 19 00 |
| No. 1 Bituminous | 20 00 | B—1, " | 17 00 |
| No. 2 " | 18 00 | No. 2, " | 16 00 |

CAR-WHEEL AND MALLEABLE IRON.

| | | | |
|---|---|---|---|
| No. 3, L. S. Charcoal | $23 00 | Nos. 5 & 6, L. S. Char. | $23 00 |
| No 4, " " | 23 00 | | |

BESSEMER IRON.

| | |
|---|---|
| Nos. 1 & 2, L. S. Char | $23 00 |

FORGE IRON.

| | | | |
|---|---|---|---|
| No. 1, Gray | $18 00 | White and Mottled | $16 00 |

### Columbus, O. Oct. 21, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

The pig-iron market for the last week shows but little change from last report. The demand still continues quite active. Good brands of foundry iron are scarce and prices firm. We quote as follows:

The usual time, four months, allowed on quotations.

FOUNDRY IRONS

| | |
|---|---|
| No. 1 Hanging Rock Charcoal | $22 00@$22 50 |
| No. 2 " " " | @ |
| No. 1 Hocking Valley soft and strong from pure limestone ores | 18 00@ 18 50 |
| No. 2 Hocking Valley soft and strong from pure limestone ores | 17 00@ 17 50 |
| No. 1 American Scotch | 18 00@ 18 50 |
| No. 1 Moxahala | 18 00@ 18 50 |
| No. 2 " | 17 00@ 17 50 |
| No. 1 Shawnee | 18 00@ 18 50 |
| No. 1 Eliza (Jackson County) | 18 00@ 18 50 |
| Silver Gray | 16 50@ 17 00 |

MILL IRONS.

| | |
|---|---|
| Gray neutral | 16 00@ 17 00 |
| Mottled and white neutral | 15 50@ 16 00 |
| Gray cold short | 16 00@ 16 50 |
| Mottled and white cold short | 15 00@ 15 50 |

### Louisville. Oct. 22, 1878.

[Specially reported by Messrs. GEORGE H. HULL & Co.]

Prices are firm for all grades of pig-iron, with a moderately good demand. The supply of some brands largely used here is short, in consequence of the blockade South.

The usual time, four months, is allowed on quotations below:

FOUNDRY IRONS.

| | No. 1. | No. 2. |
|---|---|---|
| Hanging Rock Charcoal | $21 00@$22 00 | $19 00@$20 00 |
| Southern Charcoal | 18 00@ 18 50 | 16 50@ 17 00 |
| H'n'g Rock, Stc'l & Coke | 19 00@ 20 00 | 18 00@ 18 50 |
| Southern Stonecoal & Coke | 18 50@ 19 00 | 17 00@ 17 50 |

"Amer. Scotch"... $18@$19 | Silver Gray... $16@$17.00

MILL IRONS.

| | |
|---|---|
| No. 1 Charcoal, Cold-short & Neutral | $16 00@$17 00 |
| No. 1 Stc'l & Coke, Cold-short & Neutral | 16 00@ 16 50 |
| No. 2 Stc'l & Coke, Cold-short & Neutral | 15 00@ 15 50 |
| No. 1 Missouri and Indiana, Red-short | 20 00@ 21 00 |
| White & Mottled, Cold-short & Neutral | 14 50@ 15 00 |

CAR-WHEEL AND MALLEABLE IRONS.

| | |
|---|---|
| Hanging Rock, Cold Blast | $29 00@$30 00 |
| Alabama and Georgia, Cold Blast | 28 00@ 29 00 |
| Kentucky, Cold Blast | 25 00@ 28 00 |

### Milwaukee. Oct. 22, 1878.

[Specially reported by Messrs. R. P. ELMORE & Co.]

CHARCOAL IRON.

| | |
|---|---|
| No. 1 Lake Superior per gross ton | $23 00—4 mos. |
| " 2 " " " " | 22 00—4 mos. |

ANTHRACITE IRON.

| | |
|---|---|
| No. 1 Anthracite per gross ton | 23 00—4 mos. |
| " 2 " " " | 22 00—4 mos. |

STONE COAL AND COKE.

| | |
|---|---|
| Warner's Am Sc'th (Bk. Band, per ton | $24 00@ —4 mos. |
| Soft Silvery per ton | 21 00@ —4 mos. |
| Ohio Stone Coal | 22 00@ —4 mos. |

CAR WHEEL.

| | |
|---|---|
| Lake Superior ores per ton | $24 00@25 00—4 mos |

### Philadelphia. Oct. 24, 1878.

[Specially reported by JUSTICE COX, JR., & Co., Iron Merchants, 333 Walnut street, Philadelphia.]

**Pig Iron.**—There is little new to report. There is a small business doing in pig at quoted prices. We report sales of about 2000 tons, at $17 to $19 for No. 1, $16 to $18 for No. 2, and $15 to $16 for Gray Forge, all Philadelphia.

**Manufactured Iron.**—The demand for bars is a little more brisk, but is yet so dull that mills have all that they can do to keep running, while with plate all are as busy as possible. In skelp nothing new can be reported. We quote: Bars, 1¾ to 2c. as to quality; plate and tank, 2 2-10 to 6c. per lb.; skelp, 1 8-10 to 2c.

**Rails.**—The steel-rail mills continue to get all the orders they want, and refuse now and then. Iron rails are fairly active, at low quotations. We quote: Steel, $42 to $44; iron, $30 to $35, all delivered.

**Old Rails** are quoted active at $18 to $19.50 in Philadelphia.

**Scrap.**—Wrought is quoted dull at $18 to $20, in Philadelphia; cast, dull, $12 to $16, delivered at Philadelphia.

**Old Wheels** are dull at $17 to $18.

### Pittsburg. Oct. 22, 1878.

[Specially reported by A. H. CHILDS.]

The demand continues active for the best brands of pig-iron, and Western red shorts may be fairly quoted at 50 cents per ton higher than during the summer. The common grades of neutral and cold-short irons are in rather excessive supply, and no advance is probable at present. Foundry iron moves slowly and in small lots.

| | 4 mos. | | 4 mos. |
|---|---|---|---|
| No. 1 F'dry | $19.00@$20.00 | M. & White | $15.00@$16.00 |
| No. 2 " | 18.00@ 19.00 | Hot Blast Ch. | 20.00@ 23.00 |
| Gray Forge | 16.50@ 19.00 | Cold Blast W. | 35.00@ 37.00 |

**Richmond, Va.** Oct. 22, 1878.

[Specially reported by Asa Snyder, Esq.]

A fair demand for old rails and wrought-scrap continues; also, considerable inquiry for car-wheel iron. About 400 tons Gray Forge have been taken by our mills the past week, but the better grades of foundry pig-iron are dull. I quote as below :

| | | | |
|---|---|---|---|
| Amer. Scotch Pig Iron | | $21.50@ | $22.50 |
| Anthracite " " No. 1 | | 19.00@ | 20.00 |
| " " " No. 2 | | 18.50@ | 19.00 |
| " " " No. 3 | | 17.00@ | 18.00 |
| " " Mottled | | 15.00@ | 16.00 |
| Coke " No. 1 | | 19.00@ | 20.00 |
| " " No. 2 | | 18.00@ | 19.00 |
| Va. Cold Blast Charcoal Pig Iron, cold short | | 19.00@ | 22.00 |
| " " " " " neutral. | | 27.00@ | 28.00 |
| " Warm " " " cold short | | 18.00@ | 20.00 |
| " " " " " mill | | 17 00@ | 18 00 |
| Old Rails | | 16.50@ | 17.50 |
| Wrought scrap No. 1 | | 16.00@ | 17.00 |
| Cast scrap—Machinery | | 15.00@ | 16.00 |
| Richmond Refined Bar Iron | | 2.00@ | 2.10 |
| Horse-shoes | | 4.00@ | |
| Mule-shoes | | 5.00@ | |
| Old Dominion nails (standard size) | | 2.25 keg. | |

Freight by sail to New York, $1.60 for 2240 lbs.

**St. Louis.** Oct. 22, 1878.

[Specially reported by Messrs. Spooner & Collins, Commission Agents for all kinds of Iron.]

Pig-iron business the past week improved slightly, but prices remain firm at quotations. Old rails are in some demand at present, but at low prices.

COLD BLAST CHARCOAL—ALL NUMBERS.

| | | | |
|---|---|---|---|
| Hanging Rock | $23@$25 | Assorted Bar Iron | $1.95 rates. |
| Tennessee | 22@ 23 | No. 1 Wr'ght Scrap, | 90c. cwt. |
| Kentucky | 22@ 23 | Heavy cast " | 65c. " |
| Missouri | 22@ 23 | Light " " | 40c. " |
| Georgia | 22@ 23 | Old rails | $19 00@$20 00 |
| Alabama | 22@ 23 | Old carwheels | 17 00@ 18 00 |

| | No. 1. | No. 2. | Mill. | White and Mottl'd |
|---|---|---|---|---|
| Missouri stone coal | $21 00 | $20 00 | $19 00 | $17 00 |
| " charcoal | 20 00 | 19 00 | 18 00 | ..... |
| Tennessee charcoal | 20 00 | 18 50 | 17 50 | ..... |
| Tenn. coke very soft and strong | 20 00 | 19 00 | 17 00 | 16 00 |
| Hanging Rock charcoal | 22 00 | 20 00 | 19 00 | ..... |
| " " cold short | 23 00 | 21 00 | 20 00 | ..... |
| | ExNo.1 | No. 1. | BNo.1. | No. 2 |
| Alice Hanging Rock coke. | $22 00 | $21 00 | $19 50 | $19 00 |
| Moxahala Black Band ores | 21 00 | 20 00 | 19 50 | 18 00 |

## METALS.

New York, Friday Evening, Oct. 25, 1878.

Some articles on the list have been quite active, while prices in nearly all cases have been well maintained, and, in some, advanced. For the moment there is a better feeling, but we see nothing that will probably maintain the present firmness.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING OCTOBER 24TH AND YEAR FROM JANUARY 1ST, 1878.

| | Oct. 3. | Oct. 10. | Oct. 17. | Oct. 24. | Year from Jan. 1 |
|---|---|---|---|---|---|
| Copper, bbls | 324 | 211 | 345 | 478 | 20,235 |
| Copper, boxes | ..... | ..... | ..... | ..... | 113 |
| Copper, cakes | 781 | 309 | 979 | 1,311 | 15,429 |
| Lead, pigs | 838 | 7,820 | 2,015 | 2,132 | 239,841 |
| Spelter, pieces | ..... | ..... | ..... | 4,146 | 38,673 |
| Quicksil'r, flasks | 250 | ..... | ..... | ..... | 1,221 |

**Gold Coin.**—During the week under review the price of gold has ranged from 100⅝ to 100⅜, and closed at 100⅜.

**Copper.**—The business of the past week has been very small at 15½@15¾c. At the close Lake copper can be purchased at 15½c., although there is said to be but little offering under 16c. The latest cable advice quoted Chili bars in London at £56 10s.

A correspondent, writing from London under date of October 15th, says :

"About 300 tons Chili bars, good-ordinary and favorite brands, for short arrival, were sold yesterday afternoon at £58 per ton, and to-day we note only 25 tons G. O. B.s at £57¾, usual cash terms. Present prices are evidently attracting attention to this metal, and a large proportion of the purchases, from £60 downward, have no doubt been on account of speculators willing to invest in the article. The details of the Chili charters (4000 tons) for the latter half of August are now to hand, and prove to contain, as we had surmised, a large quantity of stuff out of the stocks of the late Mr. A. Edwards—about 1700 tons—come to his representatives here ; besides which there are some 700 tons Lota Bars, for shipment only during the present month. The advices go on to state that up to August 30th, about 5500 tons had been sent out of Mr. Edwards' stocks, against 1000 tons during same period last year."

**Tin.**—Straits in London is quoted at £57. The market here is "cornered," and at the close is 14¾c. ; 1000 slabs, on spot, have sold at 14@14½c., and 1000 to arrive at 13½@13¾c. ; 20 tons of L. & F. were sold to-day at 13⅝c.

**Tin Plates.**—"It is an ill wind that blows nobody good." The severe storm which passed over Philadelphia, on Wednesday morning, carrying off the roofs of more than a hundred houses, churches, etc., created a large and unexpected demand for roofing plates. There have been sales of about 4000 boxes of 20×28 charcoal roofing, causing an advance within a day from $10-62½ to $11.50 per box. There is still a large demand to supply. In other descriptions the business has been quiet. We quote, per box, as follows : Charcoal, bright, ⅛ X, Melyn grade, at $5.87½@$6, and Allaway grade, $5.75@$5.87½ ; charcoal ternes, Allaway grade, $5.37½ ; coke, bright, B. V. grade, $4.75@$4.80 ; coke roofing, 14×20, $4.70.

Messrs. Robert Crooks & Co., of Liverpool, under date of October 10th, say of tin and terne plates :

"Little is doing, owing to the non-concurrence of buyers and sellers as to values, former believing that the whole tendency of the times is against permanence of any advance, while latter are fully convinced that with a restriction in make, prices must be above the starvation-point lately touched. The truth probably lies half-way between the two."

**Lead.**—Sales amounting to 400 tons of lead to arrive have been made at 3·60c. Small lots have sold at 3·70c, which is the closing price to-day. The market is quite artificial, and the present effort to maintain prices, while the production is in excess of the consumption, must meet with the fate of all such efforts—an extraordinary decline when the stock becomes too heavy to carry ; for when one holder begins to unload, others will follow, and the result will probably be lower prices than we have had this year.

**Spelter and Zinc.**—There is no business worthy of note doing in either of these articles. Spelter is quoted at 4⅞@5c., and sheet zinc at 5¾c.

**Antimony.**—With but a limited business, we quote Cookson's at 12⅜c. and Hallett's 12c.

**Bullion.**—The silver market has improved in London, the past week, in consequence of the Indian Council not having sold any of their bills on India at its meeting on Wednesday. The market is represented, however, as very inanimate and without indications. Our market has improved, owing to the London advance, a higher sterling exchange market and an active demand from manufacturers, but may be said to depend chiefly on the policy of the government, both in respect to the weekly amount it may buy and upon the rate at which it would accept proposals, that is, whether at a fair parity of the London market, or at a material discount from this, as the Secretary of the Treasury claims the government should make its purchases. The London quotation is 49¾d. ; the price here is 107½.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

| Date. | London Pence. | N. Y. Cents. | Date. | London Pence. | N. Y. Cents. |
|---|---|---|---|---|---|
| Oct. 19 | 49½ | 106½ | Oct. 23. | 49 9 16 | 106⅝ |
| Oct. 2 | 49½ | 106½ | Oct. 24. | 49⅝ | 107¼ |
| Oct. 22 | 49½ | 106½ | Oct. 25. | 49¾ | 107½ |

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of Oct. 19th :

| | | | |
|---|---|---|---|
| October 7th | Indian Queen | Nev. | $5.743.74 |
| " 9th | Manhattan | " | 11,582.80 |
| " 11th | Tybo Con | " | 14,858.35 |
| " 12th | Northern Belle | " | 10,722.04 |
| " 12th | California | " | 94,177.46 |
| " 12th | Con. Virginia | " | 50,710.25 |
| " 14th | Navajo | " | 7,500.00 |
| " 14th | Independence | " | 12,000.00 |
| " 16th | Hillside | " | 12,200.00 |
| " 10th | Bodie | Cal. | 11,723.26 |
| " 12th | Standard | " | 36,056.99 |
| " 6th | Peck | Ariz. | 4,060.00 |
| " 6th | Tip Top | " | 9,987.00 |
| " 6th | Silver King | " | 32,572.95 |
| " 7th | Weisl & Co | " | 1,800.00 |
| " 7th | L. J. W., Globe | " | 2,200.00 |
| " 9th | Hackberry | " | 6,132.30 |
| " 9th | McCrackin | " | 7,524.57 |
| " 9th | Mineral Park | " | 4,317.00 |
| " 9th | El Dorado Mill | " | 5,300.00 |
| " 9th | Aqua Fria Furnace | " | 3,000.00 |
| " 7th | Germania | Utah | 5,000.00 |
| " 11th | Silver Reef | " | 19,691.41 |
| " 14th | Christy | " | 5,395.00 |
| " 5th | Black Jack | Idaho | 9,114.98 |
| " 5th | Monarch | " | 4,535.00 |
| " 5th | Banner District | " | 16,280.00 |

The yield from the principal Arizona mines, for the eight months ending August 31st, has been :

| | | | |
|---|---|---|---|
| Hackberry | $147,190 | Silver King | $393,183 |
| McCrackin | 3·9,372 | Tip Top | 178,000 |
| McMillen | 102,445 | | |
| Peck | 132,630 | Total | $1,272,820 |

Wells, Fargo & Co.'s treasure receipts for the quarter ending September 30th aggregated $14,661,200, as against $19,611,900 for the same period in 1877. There was a falling off in the silver product of nearly $7,000,000, and an increase of $2,000,000 in the gold product.

Regulations for the Purchase of Silver Bullion.—A special dispatch to the New York *Times*, dated Washington, October 22d, says : "Bids will be received to-morrow for the purchase of silver bullion under Secretary Sherman's recent order. In accordance with the Secretary's regulations, the bids will be made by telegraph, and bidders whose offers may be accepted, either for the whole amount or any part thereof, will receive notification by telegraph. The new regulations require these telegraphic bids to be simply addressed to 'The Director of Mints, Washington, D. C.' This seems to be a careless and unsafe manner to transact business of this kind, for the reason that there is no way prescribed for distinguishing bids for bullion from any other business that may be addressed by telegraph to the Director of Mints. Bids thus addressed are liable to be opened at different times through the day, making it possible to give tardy bidders the figures already received, and the advantage of any favorable change that may take place in the market. Under the Secretary's regulations, it is possible, in various ways, for the more adroit operators to become possessed of the figures of competitors ; and while the possession of such knowledge would be likely to inure to the advantage of the government in purchasing, early bidders would be prejudiced and placed at an unfair disadvantage. It is probable, when the attention of the Secretary is called to this matter, that methods will be adopted to preclude the possibility of bids being opened until all that are to be considered shall be received.

"The amount of silver bullion to be purchased to-morrow is 400,000 ounces. Heretofore, the regular weekly purchases have been about 750,000 ounces, that amount being about equal to the weekly yield of our mines. The order limiting the purchase to 400,000 ounces weekly will probably result in renewing the agitation in favor of free coinage at the next session of Congress. Unless this limitation is removed, the holders of the surplus product of our mines, as well as the owners of demonetized silver in Europe, will very likely urge the advocates of silver in Congress to renew the fight for free silver coinage."

The *Post* of to-day says : "The offers to sell silver bullion to the Treasury will, according to our information, be opened at the United States Treasury (at Washington) to-day. There is a question whether these will be given out for publication ; whether they are or not is a matter of not the first importance. We assume, however, that the awards will be published, and the public be informed of the price paid for the silver to be used in the 412½-grain dollar coinage. There is no reason why silver purchases should not be given the same publicity that bond purchases or gold sales have been given in the past. At the current price in New York, enough silver bullion to make one hundred thousand 412½-grain dollars can be bought for $83,144.04."

*The Gold Bullion Purchase Order.*—Information has been received at the Mint bureau that the recent order for the purchase of gold bullion at Charlotte, N. C., and Denver, Colo., is a complete success, the miners being very glad to sell their bullion for its coin value in legal tenders, less the charges for melting, assaying, etc. The same regulation will soon be put into effect at Boise City, Idaho, and Helena, Montana.

## FINANCIAL.

### Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 25th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

| Stocks. | Par Value. | High'st | Lowest | Closing | Sales : Shares. |
|---|---|---|---|---|---|
| American Coal Co. | $25 | ..... | ..... | 30 | ..... |
| St. L., I. M. & S. R. Co. | 100 | 11⅞ | 10 | 10½ | 3,490 |
| Spring Mt. Coal Co. | 50 | ..... | ..... | 50 | ..... |
| *Cambria Iron Co. | 50 | ..... | ..... | 57 | ..... |
| *Penn. Salt Mf'g Co. | 50 | ..... | ..... | 67 | ..... |
| *Westm'land C. Co. | 50 | ..... | ..... | 50 | ..... |
| *Buck Mt. Coal Co. | 50 | ..... | ..... | 38 | ..... |
| *Schuyl. Nav. Co. | 50 | ..... | ..... | ..... | ..... |
| †B. & O. RR. Co. 1st pf | ..... | ..... | ..... | 95 | ..... |
| †B. & O. RR. Co. 2d pf | 100 | ..... | ..... | 85 | ..... |
| " " " " com | 90 | 82 | 81½ | 81 | 87 |
| †George's C'k C. Co | 100 | ..... | ..... | 86½ | ..... |
| †S. Clara M'g Co. | 100 | ..... | ..... | 25 | ..... |
| †Atlantic Coal Co. | 10 | ..... | ..... | 90 | ..... |

| Bonds. | Princ'l. When Due. | Int'est. When Due. | Hig'st. | Lowest | Amount. |
|---|---|---|---|---|---|
| D., L. & W., 7s, conv | 1892 | J. & D. | ..... | ..... | ..... |
| " " " " 2d mtge. | 1881 | M. & S. | 103 | ..... | 5,000 |
| N. J. C., 1st mtge. new | 1890 | F. & A. | ..... | ..... | ..... |
| " " " 1st mtge., con | 1899 | Q. | 68 | 66¾ | 12,000 |
| " " " convt. | 1902 | M. & N. | 65 | ..... | 11,000 |
| Lehigh & W. B., con | 1899 | Q. | 60½ | 59 | 18,000 |
| Am. Dock & Imp. 7s | ..... | J. & J. | ..... | ..... | ..... |
| St. L. I. M. & S. 1st mt | 1892 | F. & A. | ..... | 105½ | ..... |
| Ches. & O., 1st mtge | 1899 | M. & N. | ..... | ..... | ..... |
| D & H C Co., 1stm. rg | 1884 | J. & J. | ..... | 96½ | ..... |
| " " " " " | 1891 | J. & J. | ..... | 96½ | ..... |
| " " " " m. loan cp | 1894 | A. & O. | 97½ | ..... | 2,000 |
| " " " " rg. | 1894 | A. & O. | ..... | ..... | ..... |
| " " " " new mge. | ..... | ..... | ..... | ..... | ..... |
| *L. V. R., 1stm. 6s. cp. | 1898 | J. & D. | ..... | ..... | ..... |
| " " " " rg. | 1898 | J. & D. | ..... | 112½ | ..... |
| " " " 2d m. 7s, rg. | 1910 | M. & S. | 116 | ..... | 5,000 |
| " " " con. m. 6s, rg | 1823 | J. & D. | ..... | 101 | ..... |
| " " " " 6s cp. | 1923 | J. & D. | 101 | ..... | 2,000 |
| *Pa. RR., 1st m. 6s, cp | 1880 | J. & J. | ..... | 104½ | ..... |
| " " g. m., 6s, cp. | 1910 | J. & J. | 108¼ | ..... | 2,000 |
| " " " 6s, rg. | 1910 | A. & O. | ..... | ..... | ..... |
| " " con. m. 6s, rg. | 1905 | Q. | 97 | ..... | 1,000 |
| " " " 6s, cp. | 1905 | J. & D. | 97 | ..... | 10,000 |
| " " new loan, 5s | ..... | ..... | ..... | ..... | ..... |
| *P. & R. R., 1st m. 6s, R. C. 43-44 | 1880 | J. & J. | ..... | ..... | ..... |
| P. & R. R., 1st m. 6s, R. C. 48-49 | 1880 | J. & J | ..... | ..... | ..... |
| P. & R. R., 2d m. 7s cp | 1893 | A. & O. | ..... | 108 | ..... |
| " " " scrip | 1882 | J. & J. | 53 | 52 | 1,070 |
| " " " in. m. 7s, cp | 1896 | J. & D. | ..... | ..... | ..... |
| " " " c. m. 7s, cp. | 1911 | J. & D. | 102⅛ | 102 | 13,000 |
| " " " 7s. rg. | 1911 | J. & D. | 102 | ..... | 4,000 |
| " " " cvt. 7s, R. C | 1893 | J. & J. | 30 | ..... | 1,000 |
| " " C. & I. Co., Deb 7s, R. C. | 1892 | M. & S. | ..... | ..... | ..... |
| & R. C. & I. Co., m. 7s, R. C. | '92-3 | various | ..... | ..... | ..... |
| L. Nav. Co., 6s, rg. m. | 1884 | J. & D. | 104¼ | ..... | 1,000 |
| " " RR., rg. m. | 1897 | F. & O. | 106 | 104½ | 2,700 |
| " " cvt. co. G. R. | 1894 | M. & S. | 95 | ..... | 1,000 |
| " " " Gold R. C. | 1897 | J. & D. | 95 | ..... | 500 |
| " " con. m. 7s, rg. | 1911 | J. & D. | 72 | ..... | 4,000 |
| *P. & N. Y. C., 7s, R. C. | 1896 / 1906 | J. & D. | ..... | ..... | ..... |
| *Pa Canal, 6s. cp. | 1910 | J. & J. | ..... | 60 | ..... |
| *Schuyl. Nav., 1st m. 6s. rg | 1897 | M. & O. | ..... | ..... | ..... |
| *Sus. Coal, 6s, rg | 1911 | J. & J. | ..... | ..... | ..... |
| †Balt. & O. RR., 6s | 1880 | J. & J. | ..... | ..... | ..... |
| " " " " 6s | 1885 | A. & O. | 105⅝ | ..... | 2,000 |

Total transactions for the week..... $98,270

## COAL STOCKS.

| Name of Company. | Capital Stock. | Shares. No. | Shares. Par Val. | Last Dividend. Mo. | Last Dividend. Y. | Last Dividend. A't. | Rate per Ann. | Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share. Oct. 19. H. | Oct. 19. L. | Oct. 21. H. | Oct. 21. L. | Oct. 22. H. | Oct. 22. L. | Oct. 23. H. | Oct. 23. L. | Oct. 24. H. | Oct. 24. L. | Oct. 25. H. | Oct. 25. L. | Sales. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $ | | $ | | | | Per c'nt | | | | | | | | | | | | | |
| Consol. Coal. | 10,250,000 | 102,500 | 100 | Jan. | 77 | 2½ | .... | | | | | | | | | | | | | |
| Del. & H. C.. | 20,000,000 | 200,000 | 100 | Aug | 76 | 4 | 9 | 46⅛ | 45⅝ | 46¼ | 44⅛ | 44⅛ | 43⅛ | 45⅛ | 43¾ | 44⅛ | 43⅜ | 45¾ | 44 | 9,048 |
| D., L.&W. RR | 26,200,000 | 524,000 | 50 | July | 76 | 2½ | 5 | 50¾ | 49½ | 50¾ | 49¼ | 49⅛ | 48⅜ | 50½ | 49 | 49¾ | 48⅝ | 51¼ | 48¾ | 175,440 |
| Lehigh C.& N | 10,448,550 | 208,971 | 50 | Nov | 76 | 1½ | 5⅛ | 16¼ | 16⅛ | 16⅛ | 16⅛ | 16⅛ | 16 | 16 | 16 | 15¾ | 15¾ | 16 | 15⅛ | 2,800 |
| Leh. V'y R. R | 27,228,855 | 540,858 | 50 | July | 78 | 1 | .... | 38⅛ | 38 | 38⅛ | 38 | 38 | 37¼ | 37⅝ | 37⅛ | 37¼ | 37 | 37 | ..... | 1,713 |
| Mary'd Coal | 4,400,000 | 44,000 | 100 | Jan. | 76 | 1½ | 1½ | | | | | | | | | | | | | |
| N. J. C. R. R. | 20,800,000 | 206,000 | 100 | Apr | 76 | 2½ | 2½ | 31⅛ | 30⅝ | 31½ | 30½ | 30½ | 28¾ | 30 | 28⅞ | 28⅝ | 27 | 28½ | 26¼ | 13,121 |
| Penn. Coal... | 5,000,000 | 100,000 | 50 | May | 78 | 3 | .... | | | | | | | | | | | | | |
| Penn. R. R.. | 68,870,200 | 1,337,404 | 50 | May | 77 | 1½ | 8 | 33⅜ | 33¼ | 33⅜ | 32⅞ | 33¼ | 32¾ | 33⅜ | 32⅛ | 33 | 32⅞ | 33⅜ | 33¼ | 41,300 |
| Ph. & R. R. R | 34,278,175 | 685,563 | 50 | Jan | 76 | +2½ | 10 | 14⅛ | 13¾ | 14 | 13⅝ | 13⅝ | 13⅛ | 13⅜ | 13⅜ | 13⅜ | 13 | 13⅜ | 13¼ | 27,161 |

The Delaware and Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia and Reading $43,012,497.
Total Sales.... .....270,583.

### New York Stocks.

NEW YORK, Friday Evening, Oct. 25, 1878.

The coal stocks in this market have been very active during the week under review. The tendency until to-day has been downward, but to-day all sorts of favorable rumors were set afloat, and the "shorts' were largely made to cover. At the present time there is a good coal business doing, and prices are well maintained. But still October has always been the best month in the year, and although there is more doing this month than for several months past, yet the business will not amount to three fourths of what it has during the same month in some years past. Delaware, Lackawanna, and Western has been dealt in to the extent of 175,440 shares, at 51¼@48⅝, closing at 51¼; Delaware and Hudson Canal, 9048 shares, at 46⅛@43½; closing at 45¾; New Jersey Central, 1713 shares, at 31½@26⅛, closing at 28¼.

### Philadelphia Stocks.

PHILADELPHIA, Friday Evening, Oct. 25, 1878.

The tendency of the coal shares quoted on this market are to lower prices, and the majority of the quotations are under those quoted in our last. The total transactions foot up over 70,000 shares, of which Pennsylvania R. R. contributes 41,300 shares, at from 32¾ to 33⅜, closing at 33¼. Reading stock closes at 13⅜, with sales of 27,161 shares. Lehigh Valley and Lehigh Coal and Navigation stocks close at 37 and 15⅞, respectively.

AUCTION SALES.—*Philadelphia and Reading R. R. Co.*—$1000 of the 7 per cent bonds, 1893, at 109⅝ per cent.
*Oil City Water Works.*—$1000 8 per cent bonds, at 102 per cent.
*Huntingdon and Broad Top Mt. R. R.*—$5000 gold 7s, at 102 per cent.
*Union Canal Co.*—500 shares preferred, at $2 per share.
*Penn Gas-Coal Co.*—50 shares at 32 per share.
*Cambria Iron Co.*—80 shares at $80⅛ per share.
*Reading and Columbia R.R. Co.*—$500 1st mortgage 7 per cent bonds, 1882, @90 per cent.
*Chesapeake and Ohio R.R. Co.*—1st mortgage 6 per cent coupon bonds coupons, on from November 1st, 1873, at 27⅛ per cent.
*Hannibal Bridge Co.*—50 shares, at $87½ per share.
*Keokuk and Hamilton Bridge Co.*—85 shares, at $1 per share.
*American Zinc Co.*—$5000, 8 per cent coupon bonds; coupons on from December, 1872, at 1 per cent.

### Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Oct. 23, 1878.

The market has been more quiet than usual the past week, there being very few sales and little demand for the stocks. The market on most of the stocks has fallen off in consequence, although, in their present condition, it would take but very few orders to strengthen them again, as there are but few of any of the stocks on the market, most of the holders preferring to hold off for a better and more active market, when they expect their stocks will bring better prices, to selling at the present figures which in most cases would be a loss of 50 per cent or more.

Whether that "better and more active market" will ever come, can only be conjectured; and unless something occurs soon to enhance the value of ingot copper, we think the prospects of it will not be very brilliant.

At present the entire attention of the mining stock speculators seems to be devoted to California stocks, and there is no doubt but that they at present offer the best inducements for speculation.

Allouez sold at 2¾ (175 shares), and then retired into its former dull state, there having been nothing done in it since.

Calumet and Hecla has declined, and sold at 175½ ex dividend, but is a little firmer at the close at 176@176½.

Copper Falls has also declined, and is now offered at 1½, and 1¼ best bid.

Franklin is also weaker, and closes 5 bid and 5½ asked.

National remains firm at 25c. bid and no stock offering.

Osceola is firm at 11 bid and 11½ asked, and sales at 11.

Pewabic is quiet at 1¼@1¾, and no sales.

Quincy has declined, and sold at 12, and closes weak at 11½@12.

Ridge is unchanged at 1⅛@1⅜.

Duncan has been fluctuating between 4⅛ and 4½, and looks rather firm than otherwise, and we should think, from appearances, that it would be a dangerous stock to go short of. It closes at 4⅛@4⅜.

International is steady at 50@55, and looks more like a good purchase than any other stock on the list.

### Gas Stocks.

NEW YORK, Friday Evening, October 25, 1878.

The market for gas stocks continues very much depressed, and we again chronicle a number of lower quotations on the decline noted last week.

BOSTON, Oct. 23, 1878.

Holders of gas-light stocks have become very much "demoralized" by the agitation of the "Electric Light" question, and there is a strong disposition to sell out; at first it seemed to be small holders, but now larger ones have come to the front. For the moment there is a little better demand for some of the choice kinds, but it may be only temporary. This class of stocks, until very recently, has stood high in price, and the most popular of any investment securities the market afforded. The Boston, particularly, has been sought for and laid away in goodly numbers by those who looked for safe and presumably permanent 10 per cent stock. This stock has sold as high as 987½ (in 1863), or nearly double its par value of $500, and, as late as 1871, brought 935 per share. Even now it is at 145 per cent on its par value. The following tabular statement will show the course of stocks this year, giving the precise dates when highest and lowest, also the present market value:

| | Since Jan. 1, 1878. Highest. | Lowest. | Value Oct. 23. |
|---|---|---|---|
| Boston (par 500).. | 820 —April 27 | 700 —Oct. 19 | 725 |
| Brookline..... | 114⅞—June 5 | 107½—Oct. 23 | 108 |
| Cambridge..... | 139¼—April 24 | 118⅞—Sept. 28 | 122½ |
| Chelsea..... | 101¼—Aug. 10 | 86 —Oct. 19 | 86 |
| Charleston (par 50)..... | 73 in 1876. | 68 —Oct. 19 | 68 |
| Dorchester..... | 102 —July 8 | 85¾—Oct. 19 | 85 |
| East Boston (par 25)..... | 35½—Feb. 23 | 29 —Oct. 19 | 29 |
| Jamaica Plain... | 121½—Aug. 31 | 109 —Oct. 23 | 109 |
| Lawrence..... | 140½—April 13 | 123 —Aug. 17 | 124½ |
| Lowell..... | 167¾—May 22 | 144¾—Oct. 19 | 144¾ |
| Lynn..... | 90 —M'ch 23 | 79¾—Aug. 31 | 75 |
| Malden and Melrose ... .. .... | 85½—May 8 | 69¾—April 27 | 80 |
| Newton and Watertown..... | 121½—July 10 | 106¼—Oct. 23 | 111¼ |
| Roxbury..... | 151¼—Jan. 9 | 142 —Oct. 23 | 144 |
| Salem..... | 100 —Oct. 2 | 97 —Feb. 9 | 95 |
| South Boston.... | 118½—July 13 | 105¼—Oct. 23 | 105¼ |
| Waltham ..... | 100 in 1877. | 86 —Oct. 2 | 80 |
| Worcester.. ..... | 137 —Oct. 2 | 132½—Oct. 12 | 130 |

RECENT SALES OF GAS-LIGHT STOCKS.

*Boston.*
Oct. 19—6 shares.....700
" " 2 " .....720
" " 1 " .....715
" " 7 " .....712½
" " 3 " .....710
" 23—3 " .....725

*Brookline.*
Oct. 19—20 shares.....107½

*Cambridge.*
Oct. 19—13 shares.....123
" " 6 " .....122½
" " 5 " .....123
" " 5 " .....122½
" " 2 " .....122
" " 5 " .....121
" " 5 " .....120⅞
" " 5 " .....120⅝
" 23— 8 " .....123¾
" " 4 " .....122½
" " 5 " .....122

*Chelsea.*
Oct. 23—5 shares.....86

*Charlestown.*
Oct. 19—25 shares (par 50) 68

*Dorchester.*
Oct. 19—12 shares.....88½
" 23 5 " .....85¾

*East Boston.*
Oct. 19—11 shares (par 25) 29
" 23—10 " .....29¾
" " 50 " .....29

*Jamaica Plain.*
Oct. 19— 2 shares.....110½
" 23 " .....110
" 23—30 " .....110
" " 10 " .....109¼
" " 6 " .....109

*Lawrence.*
Oct. 23—21 shares.....124⅛

*Lowell.*
Oct. 19—13 shares.....144¾

*Newton and Watertown.*
Oct. 19—18 shares.....109
" 13 " .....108
" 23— 5 " .....111¼
" " 10 " .....106¼

*Roxbury.*
Oct. 19— 5 shares.....146
" 23—11 " .....145
" " 24 " .....143¾
" " 2 " .....142

*South Boston.*
Oct. 19—5 shares.....110
" " 4 " .....107¾
" 23—2 " .....109¼
" " 4 " .....105¾
" " 5 " .....105¼

*The Electric Light.*—The *Shipping and Commercial List* says:

"It begins to look as though the electric light is really to be the light of the future. Certain it is that its effects are being heavily discounted in the decline of gas stocks in New York and London, based upon Mr. Edison's and Lontin's successful experiments. The Lontin process has been successfully employed in several places, and notably in Paris, where one of the great railroad depots is illuminated in this way. The Gaiety Theater, in London, is lighted by the Lontin electric light, and it is claimed at only about half the cost of gas. The Town Council of the city of Ayr, in Scotland, lately made experiments with the electric light, which proved its superiority to gas-light for the illumination of streets, large open spaces, and great buildings. It has, however, yet to be made serviceable for general use in dwellings and shops, and that is what Mr. Edison says he hopes to do."

We note the statement that "the London Stereoscopic Company, in Regent street, London, have set the example of lighting their premises with electricity. The experiment has proved completely successful, and their example will speedily be followed by other large business houses."

*An Electrical Meter.*—The New York *Times* says: "Mr. Edison has stated that it would be a difficult thing to construct a meter for electric light. A young blind man, named Robert H. Fenn, of Rochester, has just perfected a stopcock, consisting of a screw-end, which, plated with platinum, is made to press upon a small disk composed of carbon. By raising or lowering the screw, and thus varying the pressure, the strength of the electrical current can be correspondingly varied, thus measuring its amount with sufficient accuracy for all practical purposes."

*The Citizens' Gas Works*, of Harrisburg, was bid up to $70,000 on Thursday. The sheriff postponed the sale until Thursday next.

*Montreal Gas Co.*—We note transactions in the stock of this company, for the week ending the 16th inst., of 1847 shares, at prices ranging from 109½ per cent to 132 per cent, closing at 112 per cent, a remarkable decline for this stock, as compared with prices prevailing a short time ago.

AUCTION SALES:
*Brooklyn Gas-Light Co.*—200 shares, at $116@$113 per share.
*Manhattan Gas-Light Co.*—10 shares, at $148 per share.
*Metropolitan Gas-Light Co.*—25 shares, at $105 per share.
*New York Mutual Gas Co.*—22 shares, at $65 per share.
*Northern Liberties Gas Co.*—50 shares, at $38 per share.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

| Companies in New York and Vicinity. | Capital Stock. | Par. | Dividends. Rate per ann. | Dividends. Am. of last. | Dividends. Date of last. | Quotations Bid. | Quotations As'd |
|---|---|---|---|---|---|---|---|
| | $ | | P. ct. | | | | |
| Mutual, N. Y.... | 5,000,000 | $100 | 6 | 1½ | Oct., '78 | 50 | 62 |
| " Bonds... | 90,000 | 1,000 | 6 | 3½ | Aug., '78 | 95 | 103 |
| N. York " | 4,000,000 | ..... | 8 | 4 | May, '78 | 75 | 85 |
| Metrop. " | 2,500,000 | 100 | 10 | 5 | Aug., '78 | 105 | ..... |
| " Certfs... | 1,000,000 | ..... | 7 | 3½ | " '78 | 95 | 98 |
| Harlem " | 1,850,000 | 50 | 6 | 3 | Feb., '78 | 35 | 40 |
| Manhat. " | 4,000,000 | 50 | ....‡ | 5 | May '78 | 145 | 155 |
| Brooklyn, Bkln. | 2,000,000 | 50 | 15 | 5 | Apr., '78 | 110 | 120 |
| Nassau ..... | 1,000,000 | 25 | ....‡ | 3 | July, '78 | 50 | 56 |
| " Certfs... | 700,000 | 1,000 | 7 | 3½ | May, '78 | 80 | 86 |
| People's..... | 1,000,000 | 10 | ....‡ | 3½ | Jan., '76 | 16 | 22 |
| " Certfs.... | 300,000 | 1,000 | 7 | 3½ | July, '78 | 75 | 90 |
| " Bonds.... | 325,000 | ..... | 7 | 3½ | May, '78 | 90 | 96½ |
| Metrop. " | 1,000,000 | 100 | 5 | 2½ | May, '78 | 50 | 60 |
| W'msb'g " | 1,000,000 | 50 | 8 | 1½ | July, '78 | ..... | 90 |
| " Certfs... | 1,000,000 | ..... | 7 | 3½ | July. '78 | ..... | 98 |
| Citizens'..... | 1,200,000 | 20 | ....‡ | 3 | July, '78 | 55 | 65 |
| " Certfs... | 320,000 | 1,000 | 7 | 3½ | Apr '78 | 90 | 98 |
| J. C., N. J..... | 750,000 | 20 | 10 | 7½ | July, '78 | 140 | 150 |
| Municipal, N.Y. | 466,000 | 50 | ..... | ..... | ..... | 80 | 92 |
| " Bonds . | 750,000 | ..... | ..... | ..... | ..... | ..... | ... |
| ..... | ..... | ..... | ..... | ..... | ..... | ..... | ... |

### Gold and Silver Stocks.

NEW YORK, Friday Evening, Oct. 25, 1878.

The aggregate of shares sold during the week under review is larger than in any previous week since the establishment of the Mining Exchange; but as the business has been mostly in the fancies, the total in dollars and cents does not make a very imposing figure. The interest in mining continues to increase, and, with a number of good dividend-paying mines listed here, as we are promised before the winter has passed, a very active business may be looked for.

In the San Francisco stocks there has been a fair business doing. We note the following sales: California, 395 shares, at $13¼@$11⅛; Consolidated Virginia, 465, at $13¼@$12; Independence, 380, at $3.45@$2.50; Modoc, 100, at 65c.; Raymond & Ely, 10, at $6½; Tip Top, 100, at $1⅛; Hussey, 1650, at 45@50c.; Kossuth, 100, at 33c.; and Leviathan, 300, at $1@85c. Some of the Eastern purchasers of these stocks have suffered a loss by the recent decline, while there are few who stand much better off than where they started, with prospects of having all wiped out by an assessment.

In the stocks of our regular list we note the following transactions: American, 300 shares, at $4@$3; Hukill, 1100, at $4@$4.15; Moose, 2885, at $4.55@$4; New York and Colorado, 2500, at $1.95@$2.05; Ontario, 720, at $40¼@$40; Plumas, 2600, at $4.10@$3.90; Seaton, 400, at 70@75c.; Cashier, 1600, at $1.60@$1.50; Mariposa pref., 1600, at $3½@$3; Mariposa Common, 200, at $3@$2½. In the low priced fancies the dealings have been as follows: American Flag, 7700 shares, at 18@25c.; Bertha and Edith, 92,500, at 5@10c.; Buckeye, 4800, at 62@56c.; Dahlonega, 32,900, at 23@19c.; Findley, 25,500, at 51@62c.; Gold Placer, 62,400, at 24@36c.; Lacrosse, 123,400, at 41@51c. There has been considerable manipulation in these stocks, but the dealings have been almost, if not entirely, confined to members of the exchange.

The *Graphic* says: "No large city will long sustain a Stock Exchange which deals principally in mere

# GENERAL MINING STOCKS.

## Dividend Paying Mines.

| Name and Location of Company. | | Feet on Vein. | Capital Stock. | Shares. No. | Shares. Par Val | Assessments. Total levied to date. | Assessments. Date and amount per share of last. | Dividends. Total paid to date. | Dividends. Last Dividend. | Rate p. An | Highest and Lowest Prices per Share in Currency at which Sales were Made. Oct. 19. H. | Oct. 19. L. | Oct. 21. H. | Oct. 21. L. | Oct. 22. H. | Oct. 22. L. | Oct. 23. H. | Oct. 23. L. | Oct. 24. H. | Oct. 24. L. | Oct. 25. H. | Oct. 25. L. | Sales. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alps | Nev. | 800 | ..... | 30,000 | ..... | 204,000 | Sept. 1878 $1 00 | 37,500 | Apr. 1876 $0 50 | .. | .. | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| American | Col. | ..... | 1,000,000 | 100,000 | 10 | * | ..... | 80,000 | Sept. 1878 0 10 | 12 | .... | .... | 4 | 3 | .... | .... | .... | .... | 3 | .... | .... | .... | 300 |
| Belcher, G. S. | Nev. | 1,040 | 10,400,000 | 104,000 | 100 | 1,288,200 | July 1878 1 00 | 15,397,200 | Apr. 1876 1 00 | 12 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Bobtail, G. | Col. | 2,500 | 1,136,630 | 227,326 | 5 | * | ..... | 56,831 | Nov. 1877 | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Bobtail Tunnel, G. | Col. | ..... | 100,000 | 20,000 | 5 | 52,000 | July 1873 0 30 | 48,000 | June 1878 | 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Bodie, G. | Cal. | ..... | 5,000,000 | 50,000 | 100 | 25,000 | Feb. 1878 ..... | 650,000 | Oct. 1878 | 2 00 | 20 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| California, G. S. | Nev. | 600 | 54,000,000 | 540,000 | 100 | ..... | ..... | 29,160,000 | Aug. 1878 | 1 00 | 24 | 12¾ | 12½ | 13¼ | 12¼ | 12⅝ | 12 | 12¼ | .... | 12 | 11⅛ | 12½ | 12¼ | 395 |
| Calumet & Hecla, C. | Mch | ..... | 2,000,000 | 80,000 | 25 | 1,200,000 | ..... | 13,450,000 | Aug. 1878 | 5 00 | 20 | 182 | ..... | 176 | ..... | 176½ | 176 | 176 | 175½ | 176 | ..... | ..... | ..... | 163 |
| Central, C. | Mch | ..... | 500,000 | 20,000 | 25 | 100,000 | June 1862 0 65 | 1,260,000 | Feb. 1878 | 5 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Chollar Potosi, G. S. | Nev. | 1,400 | 2,800,000 | 28,000 | 100 | 1,750,800 | Sept. 1878 5 00 | 3,060,000 | Feb. 1872 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Copper Falls, C. | Mch | ..... | 1,000,000 | 20,000 | 50 | 535,000 | May. 1876 ..... | 100,000 | Nov. 1871 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Cons. Virginia, G. S. | Nev. | 710 | 54,000,000 | 540,000 | 100 | 474,600 | June 1873 3 00 | 40,500,000 | June 1878 | 1 00 | 12 | 13¾ | 13 | 12¾ | 12½ | 12¼ | ... | 13 | 12 | 12⅛ | 12⅛ | 12⅛ | 12¼ | 465 |
| Confidence, G. S. | Nev. | 130 | 2,496,000 | 24,960 | 100 | 256,320 | Apr. 1878 0 50 | 78,000 | May. 1865 | 8½ | 8½ | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Cons. Her. & Roe | Col. | 16,500 | 1,000,000 | 100,000 | 10 | * | ..... | 120,000 | ..... | ..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Crown Point, G. S. | Nev. | 600 | 10,000,000 | 100,000 | 100 | 1,873,370 | Sept. 1878 1 00 | 11,588,000 | Jan.. 1875 | 2 00 | 24 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Daney | Nev. | 2,000 | ..... | 108,000 | ..... | 70,200 | July 1877 0 20 | 56,000 | July 1863 | 1 10⅝ | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Eureka Cons., G. S. L. | Nev. | ..... | 5,000,000 | 50,000 | 100 | 100,000 | ..... 1876 1 00 | 2,950,000 | Aug. 1878 | 3 00 | 24 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Eureka G. Mg., G. | Cal. | 1,680 | 2,000,000 | 20,000 | 100 | ..... | ..... | 2,149,000 | Apr. 1878 | 0 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Franklin, C. | Mch | ..... | 500,000 | 20,000 | 25 | 360,000 | June 1876 5 00 | 585,000 | Nov. 1871 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Gila | Ariz | ..... | ..... | 100,000 | .... | 50,000 | Apr. 1878 0 25 | 50,000 | Aug. 1875 | 0 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Gould & Curry, G. S. | Nev. | 612 | 10,800,000 | 108,000 | 100 | 2,666,000 | Apr. 1878 1 00 | 3,826,000 | Oct. 1870 | 10 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Grand Prize | Nev. | 1,500 | ..... | 100,000 | ..... | 100,000 | July. 1878 1 00 | 400,000 | Feb. 1878 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Hale & Norcross, G. S. | Nev. | 400 | 11,200,000 | 112,000 | 100 | 2,914,000 | Aug 1878 1 00 | 1,598,000 | Apr. 1871 | 5 00 | 12 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Hukill, G. S. | Col. | 3,288 | 1,000,000 | 100,000 | 10 | * | ..... | ..... | Oct. 1878 | 0 10 | 12 | 4.10 | 4 | ..... | ..... | 4 | ..... | 4.15 | 4.10 | 4.10 | ..... | 4.15 | ..... | 1,100 |
| Independence | Nev. | 1,500 | ..... | 100,000 | ..... | 55,000 | Feb.. 1878 15 | 15,000 | Aug. 1878 | 25 | .... | 3½ | 3.45 | 3.10 | ..... | 3.25 | 3.20 | .... | .... | .... | .... | 2.60 | 2½ | 380 |
| Kentuck, G. S. | Nev. | 95 | 3,000,000 | 30,000 | 100 | 300,000 | Aug. 1878 1 00 | 1,252,000 | Mar. 1870 | 5 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| K. K. Cons. | Nev. | ..... | ..... | 50,000 | ..... | 200,000 | Sept. 1878 1 00 | 50,000 | Sept. 1873 | 0 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Leeds | Uth. | 3,000 | ..... | 60,000 | ..... | ..... | ..... | 69,000 | Sept. 1878 | 0 15 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Leopard, L. G. S. | Nev. | 1,500 | 5,000,000 | 50,000 | 100 | 150,000 | June 1878 50 | 162,500 | Dec. 1876 | 0 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Manhattan | Nev. | ..... | ..... | 50,000 | ..... | ..... | ..... | 400,000 | Feb. 1877 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Merrimac, S. | Mas. | 1,500 | 500,000 | 100,000 | 5 | * | June ..... | 120,000 | Mar. ..... | ..... | 12 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Minesota, C. | Mch. | ..... | 1,000,000 | 20,000 | 50 | 436,000 | ..... 1869 1 00 | 1,820,000 | Mar. 1876 | 0 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Modoc | Cal. | 4,000 | ..... | 100,000 | .... | 350,000 | Sept. 1878 0 50 | 50,000 | Dec. 1876 | 0 50 | .... | 65c | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Moose | Col. | 39,000 | 2,000,000 | 200,000 | 10 | * | ..... | 550,000 | Mar. 1878 | 0 25 | 10 | 4.40 | 4¼ | 4.55 | 4½ | 4.60 | 4 | 4.30 | 4.20 | 4.10 | ..... | 4 | ..... | 100 |
| National, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 195,000 | Oct.. 1875 1 00 | 360,000 | Oct. 1873 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 2,855 |
| N. Y. & Colorado, G. | Col. | ..... | 1,000,000 | 50,000 | 20 | * | ..... | 20,000 | Mar. 1877 | 0 20 | .... | 2.10 | 1.95 | 2.05 | 2 | 2.05 | 2 | .... | .... | 2.05 | 2 | 2 | ..... | 2,500 |
| Northern Belle, S. | Nev. | 1,600 | 5,000,000 | 50,000 | 100 | ..... | ..... | 1,425,000 | Feb. 1878 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Ontario | Uth. | 3,000 | 10,000,000 | 100,000 | 100 | ..... | ..... | 1,800,000 | Oct. 1878 | 1 00 | 12 | 40¼ | 40 | 40 | ..... | 40 | ..... | 40 | ..... | 40¼ | 40 | ..... | ..... | 720 |
| Ophir, G. S. | Nev. | 675 | 10,080,000 | 100,800 | 100 | 3,336,000 | Sept. 1878 1 00 | 1,394,400 | Mar. 1864 | 4 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Pewabic, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 185,000 | June 1868 3 00 | 460,000 | July 1873 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Phœnix, C. | Mch. | ..... | 1,000,000 | 20,000 | 50 | 817,500 | Sept. 1870 3 00 | 20,000 | Jan. 1876 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Plumas | Cal. | ..... | 1,000,000 | 100,000 | 10 | ..... | ..... | 80,000 | Oct. 1878 | 10 | .... | 4.10 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | 4.05 | 3.95 | 4.05 | 3.90 | 2,600 |
| Polar Star, G. S. | Col. | 1,300 | 500,000 | 50,000 | 10 | * | ..... | 5,000 | Jan. 1878 | 0 10 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Quincy, C. | Mch. | ..... | 200,000 | 20,000 | 10 | ..... | ..... | 2,230,000 | Feb. 1878 | 5 00 | .... | .... | .... | 13 | 12½ | 12 | .... | .... | .... | .... | .... | .... | ..... | 75 |
| Raymond & Ely, G. S. | Nev. | 5,000 | 3,000,000 | 30,000 | 100 | 600,000 | Aug. 1878 1 00 | 3,075,000 | Sept. 1873 | 3 00 | .... | .... | .... | .... | .... | .... | .... | 6½ | .... | .... | .... | .... | ..... | 10 |
| Ridge, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 200,000 | ..... | 90,000 | Feb. 1875 | 1 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Rye Patch | Nev. | 1,600 | ..... | 30,000 | ..... | 97,500 | Nov. 1876 0 50 | 105,000 | Dec. 1877 | 0 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| St. Joseph, L. | Mo. | 2,000 acs. | 1,000,000 | 100,000 | 10 | ..... | ..... | 250,000 | ..... | ..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Savage, G. S. | Nev. | 800 | 11,200,000 | 112,000 | 100 | 3,972,500 | Sept. 1878 1 00 | 4,460,000 | June 1869 | 3 00 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Seaton, G. S. | Col. | 1,700 | 500,000 | 50,000 | 10 | * | ..... | 10,000 | May 1877 | 0 10 | 12 | .... | .... | 70c | .... | .... | .... | 70c | .... | 75c | .... | .... | ..... | 400 |
| Sierra Nevada, G. S. | Nev. | 3,650 | 10,000,000 | 100,000 | 100 | 2,050,000 | July 1878 1 00 | 102,000 | Jan. 1871 | 1 00 | 10 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Silver King | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 400,000 | Aug. 1878 | 0 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Standard | Cal. | ..... | ..... | 50,000 | ..... | 50,000 | July 1878 1 00 | 450,000 | Aug. 1878 | 1 00 | .... | 1½ | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... | 100 |
| Tip Top | Ariz | 1,500 | ..... | 100,000 | ..... | 120,000 | Aug. 1878 50 | ..... | ..... | ..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| Yellow Jacket, G. S. | Nev. | 1,200 | 12,000,000 | 120,000 | 100 | 3,798,000 | Sept. 1878 1 00 | 2,184,000 | Aug. 1871 | 2 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |
| McClinton | Cal.. | 1,000 | ..... | 0,000 | .... | ..... | ..... | ..... | ..... | ..... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | ..... |

## Non-Dividend Mines.

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Allouez, C. | Mch. | ..... | 1,000,000 | 20,000 | 50 | 940,000 | May 1876 | 5 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Alpha, G. S. | Nev. | 300 | 3,000,000 | 3,000 | 100 | 240,000 | Mar. 1878 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Alta | Nev. | 600 | ..... | 100,000 | .... | 885,000 | July 1878 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Am. Flag, G. | Col. | 5,300 | 600,000 | 60,000 | 10 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 18c | ..... | 21c | 20c | 24c | 23c | 24c | 23c | ..... | ..... | 25c | 22c | 7,700 |
| Andes | Nev. | 2,000 | ..... | 100,000 | .... | 325,000 | Apr 1878 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Baltimore Cons. | Nev. | 1,050 | ..... | 84,000 | .... | 1,015,000 | Apr. 1878 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Benton | Nev. | 600 | ..... | 108,000 | .... | 37,800 | Aug. 1878 | 0 35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Bechtel | Cal. | ..... | ..... | 60,000 | .... | 60,000 | Aug. 1878 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Bertha & Edith. G. | Vir. | 645 acs. | 3,500,000 | 350,000 | 10 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5c | ..... | 6c | 5c | 9c | 6c | 10c | 7c | 9c | 7c | 7c | ..... | 92,900 |
| Best & Belcher, G. S. | Nev. | 545 | 10,080,000 | 100,800 | 100 | 438,590 | Apr. 1878 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Boyle | Nev. | 600 | ..... | 108,000 | .... | 16,210 | Aug. 1878 | 0 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Buckeye | Col. | ..... | 2,000,000 | 400,000 | 5 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 60c | 59c | 60c | 59c | 62c | 59c | 59c | 58c | 57c | 56c | 57c | ..... | 4,800 |
| Bullion, G. S. | Nev. | 943⅛ | 10,000,000 | 100,000 | 100 | 2,952,000 | Aug. 1878 | 1 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Caledonia, G. S. | Nev. | 2,188 | 10,000,000 | 100,000 | 100 | 1,490,000 | Sept. 1878 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cashier | Col. | ..... | 500,000 | 250,000 | 2 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1.60 | .. | 1.60 | 1.55 | 1.60 | 1.50 | ..... | ..... | 1½ | ..... | 1.55 | 1½ | 1,600 |
| Challenge | Nev. | ..... | 90 | 50,000 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cleveland, G | Col. | 3,715 | 250,000 | 25,000 | 10 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1.50 | ..... | ..... | 100 |
| Cons. Imperial, G. S. | Nev. | 468 | 50,000,000 | 500,000 | 100 | 775,000 | Sept. 1878 | 0 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Con. N. Slope & E. C.T. | Col. | 15,000 | 500,000 | 10,000 | 50 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dahlonega | Ga. | ..... | 250,000 | 250,000 | 1 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 21c | 20c | 22c | 20c | 23c | 20c | 21c | .... | 22c | 20c | 21c | 19c | 32,900 |
| Dana, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 68,000 | Jan.. 1863 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dawson, S. | Ont. | ..... | 1,200,000 | 60,000 | 20 | ..... | ..... | 1878 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Day | Nev. | 1,500 | ..... | 100,000 | .... | 55,000 | Sept. 1878 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Dayton | Nev. | 1,600 | ..... | 100,000 | .... | 750,000 | Apr. 1878 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| De Frees | Ariz | 1,500 | ..... | 100,000 | .... | 100,000 | Aug. ..... | 0 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Duncan, S. | Ont. | ..... | 1,200,000 | 60,000 | 20 | 75,000 | July 1876 | 41⅔ | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4⅓ | ..... | ..... | ..... | ..... | 245 |
| Exchequer, G. S. | Nev. | 400 | 10,000,000 | 100,000 | 100 | 380,000 | Jan.. 1878 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Findley, G. | Geo. | ..... | 200,000 | 200,000 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 52c | .... | 53c | 51c | 54c | 52c | 53c | .... | 62c | 54c | 61c | 58c | 25,500 |
| Gold Placer, G. | Col. | ..... | 5,000,000 | 200,000 | 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 27c | 24c | 30c | 26c | 35c | 25c | 32c | 28c | 29c | 27c | 36c | 27c | 62,400 |
| Granville, G. | N. C. | 357 acs. | 1,000,000 | 100,000 | 10 | * | ..... | ..... | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Humboldt, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 100,000 | Sept 1878 | 0 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hussey | Nev. | 1,500 | ..... | 100,000 | .... | 70,000 | June 1876 | 0 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 48c | 45c | 50c | 48c | 50c | ..... | 50c | ..... | 50c | ..... | ..... | ..... | 1,650 |
| International, S. | Ont. | ..... | 1,200,000 | 60,000 | 20 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Julia, G. S. | Nev. | 3,000 | 11,000,000 | 110,000 | 100 | 635,000 | Sept. 1878 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Justice, G. S. | Nev. | 2,100 | 10,500,000 | 105,000 | 100 | 2,658,500 | Aug. 1878 | 1 05 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| King's Mountain, G. | N. C. | ..... | 1,200,000 | 120,000 | 10 | * | ..... | ..... | 1877 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Kossuth | Nev. | 2,700 | ..... | 108,000 | .... | 421,200 | Aug. .... | 0 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 33c | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 100 |
| Lacrosse | Col. | 3,900 | 1,000,000 | 100,000 | 10 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 45c | 41c | 50c | 42c | 48c | 47c | 49c | 46c | 51c | 49c | 50c | 46c | 123,400 |
| Leviathan | Nev. | 2,000 | ..... | 100,000 | .... | 240,000 | May. 1878 | 05 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 85c | ..... | ..... | ..... | ..... | ..... | 85c | ..... | 300 |
| Luzerne | Col. | 4,200 | 5,000,000 | 500,000 | 10 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Madison, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 123,000 | Sept 1876 | 0 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Mariposa preferred | Cal. | 44,387 | 5,000,000 | 50,000 | 100 | 1,425,000 | June 1877 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3½ | 3¼ | 3¼ | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,600 |
| " common | Cal. | acres. | 10,000,000 | 100,000 | 100 | 1,425,000 | June 1878 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | 2½ | ..... | 2½ | ..... | 200 |
| McCracken | Ariz | 4,500 | ..... | 100,000 | .... | 50,000 | July 1878 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Martin White | Nev. | ..... | ..... | 100,000 | .... | 500,000 | July 1877 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Memphis | Col. | 6,000 | 300,000 | 60,000 | 5 | * | ..... | ..... | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Mesnard, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 160,000 | Apr. 1876 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Mexican, G. S. | Nev. | 600 | 10,080,000 | 100,800 | 100 | 217,400 | May. 1878 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Minnietta Belle | Cal. | 1,500 | ..... | 100,000 | .... | 75,000 | Apr. 1878 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Mt. Bross Tunnel | Col. | 8,600 | 2,000,000 | 200,000 | 10 | * | ..... | 1878 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Navago | ..... | 1,500 | ..... | 100,000 | .... | 125,000 | May. 1878 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New York | Nev. | 1,000 | ..... | 100,000 | .... | 730,000 | Aug. 1878 | 0 30 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Occidental | Nev. | 1,706 | ..... | 40,000 | .... | 72,500 | Feb. 1877 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Orig. Keystone | Nev. | 1,500 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Overman, G. S. | Nev. | 1,200 | 3,840,000 | 38,400 | 100 | 3,404,280 | Sept. 1878 | 3 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Osceola, C. | Mch. | ..... | 1,000,000 | 40,000 | 25 | 2,567,880 | Nov. 1877 | 3 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 225 |
| Petherick, C. | Mch. | ..... | 500,000 | 20,000 | 100 | 165,533 | Mar. 1876 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Pleasant View, G. | Col. | 1,200 | 200,000 | 20,000 | 10 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Quicksilver preferred | Cal. | 8,500 | 4,291,300 | ..... | ..... | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| " common | Cal. | acres. | 5,708,700 | 100,000 | 100 | * | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 12¼ | ..... | ..... | ..... | 100 |
| Rockland, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 495,000 | Jan.. 1874 | 1 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Seg. Belcher, G. S. | Nev. | 160 | 640,000 | 6,400 | 100 | 244,800 | Apr. 1876 | 5 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Silver Hill, G. S. | Nev. | 5,400 | 10,800,000 | 108,000 | 100 | 1,242,000 | July. 1878 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Silver Prize | Nev. | 1,500 | ..... | 100,000 | .... | 23,000 | May. 1878 | 0 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Star, C. | Mch. | ..... | 500,000 | 20,000 | 25 | 265,000 | Mar. 1876 | 0 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Superior, C | Mch. | ..... | 500,000 | 20,000 | 25 | 340,000 | Mar. 1878 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Tioga | Cal. | 1,500 | ..... | 100,000 | .... | ..... | July 1878 | 0 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Trojan | Nev. | 1,500 | ..... | 100,000 | .... | 215,000 | June 1878 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Union Cons. G. S. | Nev. | 850 | 10,000,000 | 100,000 | 100 | 310,000 | Apr.. 1874 | 0 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utah | Nev. | 1,000 | ..... | 20,000 | .... | 660,000 | Aug. 1878 | 2 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Ward | Nev.

fancies. The present managers of our Mining Exchange are injuring their own board by winking at these gambling bets on the prices of stocks that have not even a prospective value. There are plenty of securities upon which one might almost guarantee from 1 to 5 per cent a month; and it is these which should be offered to the investing public."

A correspondent, in the same paper, replies to this in a lengthy communication, wherein he would lead the public to suppose that all the mines on the list had values which are constantly being stated by honest brokers, and that the reason why some stocks are not more largely dealt in is because the public wants to get them cheaply. Has it never occurred to this correspondent that the true reason that some of these stocks have not bought freely is because the holders are asking in some cases several times the true value of the stocks? All of the mines have been listed long enough for the public to learn their merits, and when it finds a stock deserving attention, it is quickly taken up. We are happy to say, however, that the managers of the board are not winking at all that is going on in the exchange, as the following action taken to-day by the Committee on Securities will indicate:

*Whereas*, The Committee on Securities, after a full investigation (at which the management was heard) report, that the officers of the American Consolidated Gold and Silver Mining Company "have been giving a willfully false financial position to the Company," but without expressing any opinion prejudicial to the value of the property itself: *Therefore*, in accordance with Article 5, Section 6, of the Constitution,

*Be it Resolved*, That the stock of the American Consolidated Gold and Silver Mining Company be stricken from the list of stocks dealt in at the Exchange (allowing sixty days from date to afford opportunity to close existing contracts); subject, however, to relisting, without fee, whenever such a change in its management shall be made, as shall be a satisfactory guarantee to the Governing Committee for the future.

It is impossible to act quickly in such matters, but an effort is being made by the present committee to give the list a thorough cleaning and make the Exchange take that position in the eyes of the public that it should. Of course all such actions as the above will meet with strong opposition from unscrupulous members, but they should and will receive the strongest support from those who have a true interest in advancing mining in the eyes of the Eastern public to the position of a legitimate industry. The American mine at one time held the most prominent position on the list. This action supports the criticisms made by us months past. Since the new committee went into office, we have not heard of dozens of swindles or worthless properties seeking admission to the list of the exchange, and under the present rules we are not likely to. The action in the case of the American is only a beginning. There are others to follow.

Although our "fancies" make a good basis for gambling, yet by confining most of the dealings to them, they bring a great deal of ridicule upon the Exchange. For instance, the following, taken from the San Francisco *Stock Report*, which, however, we do not credit:

"The Oakland *Times* tells a pretty good story illustrative of how they do business at the New York Mining Board. A Californian, who was until recently working on the Comstock for four dollars a day, got a point on a certain stock in which he invested two months' wages. The stock rose rapidly, and he cleaned up at the end of six weeks with $8000. Like Buck Fanshaw of happy memory, he 'never threw off on his mother,' and he resolved to go East and settle half his earnings on that aged lady, whom he had not seen for twenty years. He went. And looking around his native town for a few days and astonishing the inhabitants by his liberality and by a display of handfuls of twenties and an equally loud watch, he concluded to go to New York and view the menagerie. In the course of his wandering he drifted into the New York Mining Board. He listened to the quotations: 'A hundred Dahlonega, 5c.; 100 Gold Placer, 22c.; 1000 Lacrosse, 29c.;' and so on down the list. He was first astonished, then amused, and finally indignant. He had taken in several cocktails during the morning, and his native frankness was, if any thing, intensified thereby. When it came to Bertha & Edith, at 4 cents, he could stand it no longer, and advancing to the Caller's desk, in spite of the remonstrances of a friend, he called out: 'Say, Mr. President (hic), stop the racket. I want to raise the pot. I'll give you a thousand dollars for the whole outfit.' Then he invited the Board out to take a drink, and returned to Nevada a few days ago on a third-class ticket, and happy as a clam. He was broke and ready for a new deal. The Board had taken him over to Delmonico's and treated him to a champagne dinner, and kindly permitted him to pay for it!"

Moose is still under the influence of a "strike." American, ditto. The public is not informed as to extent or value in either case. Ontario has not declined owing to the destruction of property by fire. Dahlonega invites inspection of its bonanza. The Findley mill began running this week; hence the advance in this stock.

### THE FIDELITY MINING COMPANY, OF COLORADO.

We have before us the following letter from one of our most reliable banking firms:

BANKING HOUSE OF HANDY & CRONISE,
24 NASSAU STREET,
NEW YORK, October 24, 1878.

EDITOR ENGINEERING AND MINING JOURNAL:

DEAR SIR: We have within a few days been shown the prospectus, issued in 1876, of the so-called "Fidelity Mining Co.," of Colorado, in which our individual names are classed among the "References, or Corporators."

This use of our names has been without our authority or knowledge, and is especially unwarrantable from the fact, that we have never permitted any use of them in support of enterprises of the kind.

Very respectfully, HANDY & CRONISE.

We notice also among the "references of corporators" several very well-known names, including that of Gov. J. L. Routt, of Colorado, and of Mr. H. Beckurts, proprietor of the Denver *Tribune*. We have no personal knowledge of any part of the property claimed by the Fidelity Company in its prospectus, issued at Denver in 1876; but the unauthorized use of names is a most suspicious circumstance, and we would like to hear from our esteemed contemporary, the Denver *Tribune*, on the subject, the name of its proprietor being also given as reference.

### A WARNING TO WIDOWS AND ORPHANS.

Our own experience, and we believe that of most business men, i uniform upon one point. Whenever any one uses his religion or his church as an advertisement in his business, there is, as a plain-spoken friend puts it, "some devilment at the bottom." It is not that we have not the highest respect for religion, or that we do not concede its value in guiding the actions of business men; but it is made use of as a business advertisement only by the shrewdest and most unprincipled class of swindlers.

We have before us the prospectus of the Isabella Mill and Mining Co., of Globe District, Pinal County, Arizona. This concern claims eight locations, practically undeveloped, and no mention whatever is made as to whether the company has a U. S. Patent for the property, from which omission we judge it has not. The capital stock is placed at $10,000,000, and to our certain knowledge the faithful—ministers, clerks, and others—are being solicited to invest their little savings in the enterprise. We are not personally acquainted with any of the officers of the company; but the prospectus itself is such as would deter us from investing a five-cent nickel in the concern. The shrewd vender of the property donated a certain portion of the stock to the Wesleyan University, of Tennessee, and the ministers of the church are endeavoring to float the enterprise among the faithful. We have the most profound contempt for humbugs, and more particularly for those which put on the robes of religion to cover "sharp" business transactions; and while we personally know nothing about the property in question, we think it an excellent one to let severely alone till it gets the indorsement of some well-known expert, such as Messrs. Keyes or Jannin, of San Francisco, where the chief officers of the company are, or of some equally well-known engineer in the East. The Tucson (Ariz.) *Citizen* of the 12th inst. has the following, and we cordially indorse its opinion on the question of a church gambling in mining stocks:

"*The Church in 'Stock Deals.'*—This is from the San Francisco *Stock Report* of 3d instant:

"'Some time ago the *Stock Report* had something to say about the offering for sale by the Wesleyan University, of Tennessee, of 1000 shares of certain mining stock, the property of which was located in Arizona. These shares were the gift of a devout admirer of the University, and they were offered for sale by advertisement in the *Christian Advocate*, and with the strongest kind of editorial commendation. The entire Methodist Church, North, South, East, and West, was invited to turn to and sell this stock at $10 per share, in order to help out the Wesleyan University. Bishop Simpson, it was said, had put his shoulder to the wheel, and so had the Rev. Consul-General Newman, and with such bright and shining examples as these, the faithful everywhere were exhorted to stand in. And now we notice that up in Yolo County the brethren have got into a most unholy squabble over the purchase and sale of certain other Arizona mining stock. It seems that the church undertook to supply the whole of Yolo County with stock in the Excelsior mine, wherever that is, and among other victims was one E. Bynum, who, on certain representations of the elders and deacons, was induced to give his note for 1000 shares of Excelsior. The stock didn't turn out very well—in fact, it didn't turn out at all—and Bynum refused to pay the note. Suit was brought by representatives of the church to compel payment, but on trial of the cause the defendant claimed that he had made the note under false representations, and the jury, sustaining his views, gave him a verdict.'

"The *Citizen* is not particularly advised on the Excelsior 'stock deal,' but it has been supplied with a mass of papers touching the merits of the mine (in Globe District) and stocks offered for sale by the Wesleyan University, of Tennessee.

"Whenever a church lends its influence to promote a business speculation, honest men should severely let it alone, and sincere and worthy members of such church should at once sharply look into the character of the minister and members who are responsible for leading the church into the unworthy business. Dealing in stocks of the most productive mines is hazardous, and in stock of non-productive and undeveloped mines extremely so, and is entirely foreign to the duties of a church society. To say the best, such dealing is speculative.

"We yield to none in reverence for the true labor and mission of the Christian Church, and for this reason we enter an emphatic protest against the church being used to bolster up speculations and to induce its honest members to pay out money for sharpers to squander. Masons and Odd Fellows who have started savings banks under the name of the respective and respectable orders, and robbed the depositors of money obtained because of the names of the banks and the professions of the managers, are villains of no common degree; but ministers of the Gospel of Christ, and professed members of the Christian Church, who lend their names and commit their society to assist in the sale of mining stocks of unproved value, are still greater scoundrels, and ought to be shunned by all honest men, both as a matter of principle and protection of a holy institution from degradation."

### SAN FRANCISCO MINING STOCK QUOTATIONS.

*Daily Range of Prices for the Week.*

| NAME OF COMPANY | CLOSING QUOTATIONS | | | | | | Opening |
|---|---|---|---|---|---|---|---|
| | Oct. 18. | Oct. 19. | Oct. 21. | Oct. 22. | Oct. 23. | Oct. 24. | Oct. 25. |
| Alpha | 15¼ | 14⅛ | 12¼ | 13½ | 17⅛ | 13¾ | 14 |
| Alta | 14⅛ | 13⅞ | 13¾ | 13⅛ | 13⅛ | 13¼ | 13½ |
| Belcher | 9 | 8⅝ | 8½ | 8¼ | 9⅛ | 9½ | 9 |
| Best & Bel. | 24⅛ | 23¼ | 21½ | 21½ | 24¼ | 24 | 25 |
| Bullion | 11½ | 12¼ | 12½ | 11⅝ | 12½ | 13⅞ | 13 |
| Caledonia | 5⅛ | 5⅛ | 5 | 5⅛ | 5¼ | 5⅛ | 4½ |
| California | 12½ | 12½ | 12 | 11¾ | 11⅞ | 11⅜ | 12 |
| Chollar-Pot | 60 | 57 | 56 | 58 | 62 | 60 | 60 |
| Confidence | 11½ | 11½ | 10 | 9¾ | 10¼ | 11¼ | ..... |
| Con. Va. | 13 | 12¼ | 12 | 12 | 12 | 11⅞ | 12 |
| Crown P'int | 9¾ | 9⅝ | 9⅝ | 9¾ | 11¼ | 11½ | 12½ |
| Eureka Con | 42 | 40½ | 36½ | 40 | 39 | 38½ | ..... |
| Exchequer | 5⅝ | 5¼ | 5¾ | 5⅝ | 6 | ..... | 6 |
| Gould & Cur | 17⅜ | 16½ | 15 | 15¼ | 17¼ | 17¾ | 18 |
| Grand Prize | 5⅞ | 6⅛ | 6½ | 6⅜ | 7¼ | 7 | 7 |
| Hale & Nor. | 24¼ | 24¼ | 21 | 20¾ | 24 | 25 | 25 |
| Julia Con. | 7 | 7½ | 6¾ | 6⅜ | 6¾ | 6¼ | 6½ |
| Justice | 9¼ | 8⅞ | 8½ | 8⅝ | 9 | 9 | 8½ |
| Kentuck | 7¼ | 7 | 6 | 6 | 7¼ | 8 | 8 |
| Mexican | 59⅛ | 60¼ | 55¼ | 55¼ | 57½ | 59¾ | 59½ |
| North. Belle | 9¾ | 10 | 10⅝ | 10¼ | 11 | 10 | ..... |
| Ophir | 49 | 49¾ | 45 | 45 | 45½ | 48½ | 49 |
| Overman | 24⅝ | 25¼ | 27 | 26¾ | 27 | 27½ | 27½ |
| Ray. & Ely | 5½ | 5¼ | 5½ | 5¼ | 5¼ | 6 | ..... |
| Savage | 21½ | 20¼ | 19¼ | 20¾ | 24¾ | 24½ | 25 |
| Seg. Belcher | ..... | ..... | 35 | ..... | ..... | ..... | 35 |
| Sierra Nev. | 183 | 175 | 160 | 160½ | 165 | 175 | 180 |
| Silver Hill | 2⅞ | 2¾ | 2⅝ | 2½ | 2⅝ | 2½ | 2½ |
| Union Con. | 161 | 153 | 143 | 147 | 144 | 149 | * |
| Yel. Jacket. | 24¾ | 23¾ | 21 | 21¾ | 23¼ | 23 | 24 |
| Standard | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Utah | ..... | 31½ | 29 | 30 | 30 | ..... | 34 |
| Scorpion | ..... | ..... | 5½ | 5¼ | 3 | ..... | 2½ |
| Bodie | ..... | 19 | 19¼ | 19 | 19 | 19½ | ..... |

*150@153.

The course of the above list during the business of the past week has veen very irregular, and the course of the market has, almost without exception, been governed by the fluctuating values of the new bonanzas, Sierra Nevada and Union Consolidated. The lowest prices touched by these stocks was on the 21st, Sierra Nevada dropping to $160, and its neighbor to $143, against $194 and $161, respectively, as quoted in our report of the 17th. A gradual recovery has taken place, the opening prices showing but slight declines from the quotations of a week ago.

Crown Point shows an exceptional advance—an improvement of $2.50 per share for the week. Recent information from this mine states that the face of the joint east cross-cut, on the 2300 level, is in quartz and vein matter of fine character. The stock of the Grand Prize mine has also shown a gradual improvement, and opens in San Francisco, to-day, at $7. A recent letter from the mine speaks encouragingly of its condition, the main shaft being down 460 feet, with the water materially decreasing. Northern Belle is a little better. This mine is shipping bullion regularly. A marked advance is noted in Savage, the stock opening to-day at $25, against $22 last week.

Overman has advanced to $27½, against $25 a week ago.

We append a list of to-day's miscellaneous quotations at San Francisco, not appearing in our regular report:

Manhattan, 3½; Leopard, 1; Utah, 34; Hamburger, 2½; Navajo, ¾; Tip Top, 1½; Leviathan, 90c.; Silver King, 15; Bechtel, 1¼; Tioga, 2½; Summit, 2; Ward, 1½; Independence, 2; McClinton, ½; Kossuth, 30c.; Original Keystone, 7; Argenta, 8; Blackhawk, 6; Bulwer, 14; Belle Isle, ½; Booker, 1¼; Benton, 7; Endowment, 60c.; Goodshaw, 6; Hussey, ½; Homestake, 10; Mono, 5¾; Phil. Sheridan, 1; Richer, 1½; Scorpion, 2½; Wells-Fargo, ¾.

*Pacific Coast Powder Companies' Dividends.*—We note dividends declared by powder companies doing business in San Francisco, payable on the 15th of the present month, as follows: Giant Powder Company, 1½ per cent; Atlantic Giant Powder Company, 50c. per share; California Powder Works Company, 2 per cent.

*The Empire Gold Mining Company* has declared a dividend of 8 cents in gold per share for the month of September.

*The Excelsior Water Company* has declared dividend No. 12 for the month of September.

*October Mining Assessments.*—The San Francisco *Stock*

*Report* publishes the following list of mining assessments delinquent during the present month:

| Name. | Per share. | Amount. | Del. Oct. |
|---|---|---|---|
| Alps | $1.00 | $30,000 | 3 |
| Argenta | 25 | 25,000 | 11 |
| Black Hawk | 25 | 12,500 | 17 |
| Bodie Tunnel | 5 | 5,000 | 23 |
| Caledonia | 50 | 50,000 | 21 |
| Crown Point | 1.00 | 100,000 | 23 |
| Chollar | 5.00 | 140,000 | 8 |
| Con. Imperial | 20 | 100,000 | 17 |
| Day | 25 | 25,000 | 22 |
| Eagle | 15 | 15,000 | 15 |
| Equitable Tunnel | 5 | 2,000 | 3 |
| Europa | 6 | 6,000 | 28 |
| East Grand Prize | 5 | 5,000 | 11 |
| Fourth of July | 10 | 10,000 | 28 |
| Gila | 25 | 25,000 | 3 |
| Golden Gate Con | 50 | 5,000 | 13 |
| Golden Terra | 50 | 50,000 | 14 |
| Hackberry | 1.00 | 100,000 | 24 |
| Julia Con | 1.00 | 110,000 | 11 |
| K K Con | 1.00 | 50,000 | 16 |
| Mono | 50 | 25,000 | 1 |
| Modock Con | 50 | 50,000 | 11 |
| Nevada Gravel | 5 | 1,500 | 7 |
| North Carson | 15 | 15,000 | 30 |
| Old Channel Gravel | 5 | 1,500 | 24 |
| Ophir | 1.00 | 100,800 | 15 |
| Overman | 3.00 | 115,200 | 10 |
| Original Gold Hill | 20 | 6,000 | 23 |
| Panther | 10 | 5,005 | 11 |
| Rye Patch Con | 1.00 | 30,000 | 2 |
| Savage | 1.00 | 112,000 | 8 |
| Selby Hill | 10 | 3,000 | 30 |
| St. Louis | 15 | 16,200 | 31 |
| Sutro | 5 | 1,200 | 31 |
| Summit | 10 | 1,000 | 21 |
| Ward | 30 | 33,000 | 18 |
| Watt Blue Gravel | 10 | 10,000 | 11 |
| Wells-Fargo | 50 | 54,000 | 14 |
| Yellow Jacket | 1.00 | 120,000 | 15 |

The assessments aggregate $1,565,900.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